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274

DOW CORNING CORPORATION
MATERIAL SAFETY DATA SHEET

MATL NAME: DOW CORNING(R) 1200 PRIME COAT - RED
EMERGENCY TELEPHONE NO. (517) 496-5900

SECTION I - GENERAL INFORMATION

MANUFACTURERS NAME: DOW CORNING CORPORATION
ADDRESS: SOUTH SAGINAW ROAD, MIDLAND MI 48686

~~PROPER SHIPPING NAME(49CFR 172.101): FLAMMABLE LIQUID NOS~~
~~DOT HAZARD NAME(49CFR 172.101): NAPHTHA~~
~~D.O.T. ID NO(49CFR 172.101): UN 1993~~
~~DOT HAZARD CLASS(49CFR 172.101): FLAMMABLE LIQUID~~
~~RCRA HAZARD CLASS(40CFR 261)(IF DISCARDED): IGNITABLE (D001)~~
E.P.A. PRIORITY POLLUTANTS(40CFR 122.53): NONE
NFPA = NATIONAL FIRE PROTECTION ASSOCIATION - 704
HEALTH (NFPA): 2 FLAMMABILITY (NFPA): 3 REACTIVITY (NFPA): 0
CAS NO: MIXTURE DOW CORNING WARNING CODE: 58
GENERIC DESCRIPTION: ORGANSILICATE IN SOLVENT

SECTION II - HAZARDOUS INGREDIENT

NAPHTHA	% 85	TLV (UNITS): 300PPM;PEL500PPM
~~OSILICATE~~ organosilicate	% 5	TLV (UNITS): 5 PPM;25 PPM

ONLY THOSE INGREDIENTS LISTED IN THIS SECTION HAVE BEEN DETERMINED TO BE HAZARDOUS AS DEFINED IN 29 CFR 1910.1200. AN INGREDIENT MARKED WITH AN ASTERISK(*) IS ALSO LISTED IN 29 CFR 1910.1200(D) #4 AS KNOWN OR SUSPECTED CARCINOGEN.

COMMENT: TLV FOR ORGANOSILICATE BASED ON LIBERATED 2-METHOXYETHANOL.

SECTION III - EFFECTS OF OVEREXPOSURE

EYES: MAY IRRITATE WITH SLIGHT PAIN, REDNESS, AND POSSIBLE MINOR CORNEAL INJURY.

SKIN: A SINGLE EXPOSURE FOR SEVERAL HOURS MAY CAUSE SLIGHT REDDENING. LONGER OR REPEATED CONTACTS MAY CAUSE MODERATE IRRITATION AND POSSIBLY A MILD BURN.

INHALATION: SHORT EXPOSURE MAY CAUSE SLIGHT ANESTHESIA AND POSSIBLY SOME INJURY, DEPENDING ON CONCENTRATION AND LENGTH OF EXPOSURE. MAY ALSO IRRITATE NOSE AND THROAT SLIGHTLY.

ORAL: AMOUNTS TRANSFERRED TO THE MOUTH BY FINGERS, ETC., DURING NORMAL OPERATIONS SHOULD NOT CAUSE INJURY.

COMMENT: 2-METHOXYETHANOL (METHYL CELLOSOLVE) MAY FORM UPON HYDROLYSIS. ANIMAL REPRODUCTIVE STUDIES HAVE SHOWN 2-METHOXYETHANOL IS ABLE TO CAUSE FETAL BIRTH DEFECTS.
THIS PRODUCT, AS WITH ANY CHEMICAL, MAY ENHANCE ALLERGIC CONDITIONS ON CERTAIN PEOPLE. WE DO NOT KNOW OF ANY MEDICAL CONDITIONS THAT MIGHT BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

DOW CORNING CORPORATION
MATERIAL SAFETY DATA SHEET

ATL NAME: DOW CORNING(R) 1200 PRIME COAT - RED

SECTION IV - EMERGENCY AND FIRST AID PROCEDURES

YES: FLUSH WITH WATER.

KIN: WIPE OFF AND FLUSH WITH WATER.

NHALATION: REMOVE TO FRESH AIR. OBTAIN IMMEDIATE MEDICAL ATTENTION.

RAL: OBTAIN IMMEDIATE MEDICAL ATTENTION.

OMMENT: NONE

SECTION V - FIRE AND EXPLOSION DATA

LASH POINT (METHOD USED): CLOSED CUP 63°F/17°C
UTOIGNITION: NOT DETERMINED
LAMMABILITY LIMITS IN AIR : LOWER:N.D. UPPER:N.D.

UISHING MEDIA: WATER WATER FOG X CO_2 X DRY CHEMICAL X FOAM X OTHER

IAL FIRE FIGHTING PROCEDURES: SELF-CONTAINED BREATHING APPRARATUS AND
DTECTIVE CLOTHING SHOULD BE WORN IN FIGHTING FIRES INVOLVING CHEMICALS

JNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN TO DOW CORNING

COMMENTS: N.D. - NOT DETERMINED

SECTION VI - PHYSICAL DATA

OILING POINT(AT 760 MM HG): 210°F/99°C
SPECIFIC GRAVITY (AT 77 DEG F/25 DEG C): 0.773
MELTING POINT: NOT APPLICABLE
VAPOR PRESSURE (AT 77 DEG F/25 DEG C): 25 MM
VAPOR DENSITY (AIR = 1 AT 77 DEG F/25 DEG C): GREATER THAN 1
PERCENT VOLATILE BY VOLUME (%): ABOVE 70%
EVAPORATION RATE (ETHER = 1): LESS THAN 1
SOLUBILITY IN WATER(%): LESS THAN 0.1%
ODOR, APPEARANCE, COLOR: SOLVENT ODOR, LIQUID, CLEAR

NOTE: THE ABOVE INFORMATION IS NOT INTENDED FOR USE IN PREPARING PRODUCT
SPECIFICATIONS. CONTACT DOW CORNING BEFORE WRITING SPECIFICATIONS.

DOW CORNING CORPORATION
MATERIAL SAFETY DATA SHEET

MATL NAME: DOW CORNING(R) 1200 PRIME COAT - RED

SECTION VII - REACTIVITY DATA

STABILITY: STABLE

INCOMPATABILITY(MATERIAL TO AVOID): OXIDIZING MATERIAL CAN CAUSE A REACTION.

CONDITIONS TO AVOID: NOT APPLICABLE

HAZARDOUS DECOMPOSITION PRODUCTS: SILICON DIOXIDE, CARBON DIOXIDE, AND TRACES OF INCOMPLETELY BURNED CARBON PRODUCTS.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: NOT APPLICABLE.

COMMENTS: NONE

SECTION VIII - SPILL, LEAK AND DISPOSAL PROCEDURES

ES TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: USE ABSORBENT TERIAL TO COLLECT AND CONTAIN FOR SALVAGE OR DISPOSAL. REMOVE ALL URCES OF IGNITION AND WEAR PROPER PROTECTION EQUIPMENT.

PROTECTIVE EQUIPMENT:
EYES: USE CHEMICAL WORKER GOGGLES.

SKIN: REMOVE CONTAMINATED CLOTHING AND SHOES AT THE END OF THE WORK PERIOD AND CLEAN THOROUGHLY BEFORE REUSE.

INHALATION: USE RESPIRATORY PROTECTION UNLESS LOCAL EXHAUST VENTILATION IS ADEQUATE OR AIR SAMPLING DATA SHOW EXPOSURES ARE WITHIN TLV AND PEL GUIDELINES.

WASTE DISPOSAL METHOD: DOW CORNING SUGGESTS THAT ALL LOCAL, STATE AND FEDERAL REGULATIONS CONCERNING HEALTH AND POLLUTION BE REVIEWED TO DETERMINE APPROVED DISPOSAL PROCEDURES. CONTACT DOW CORNING IF THERE ARE ANY DISPOSAL QUESTIONS

D.O.T. (49CFR 171.8)/E.P.A. (40CFR 117) SPILL REPORTING INFORMATION
HAZARDOUS SUBSTANCE: NONE REPORTABLE QUANTITY: NOT APPLICABLE
CONCENTRATION OF HAZARDOUS SUBSTANCE: NOT APPLICABLE
REPORTABLE QUANTITY OF PRODUCT: NOT APPLICABLE

COMMENTS: NONE

DOW CORNING CORPORATION
MATERIAL SAFETY DATA SHEET

MATL NAME: DOW CORNING(R) 1200 PRIME COAT - RED

SECTION IX - ROUTINE HANDLING PRECAUTIONS

PROTECTIVE EQUIPMENT:
EYES: USE PROPER PROTECTION -- SAFETY GLASSES, AS A MINIMUM.

SKIN *: WASHING AT MEALTIME AND END OF SHIFT IS ADEQUATE.

INHALATION: USE RESPIRATORY PROTECTION UNLESS LOCAL EXHAUST VENTILATION IS ADEQUATE OR AIR SAMPLING DATA SHOW EXPOSURES ARE WITHIN TLV AND PEL GUIDELINES.

VENTILATION:
LOCAL EXHAUST: RECOMMENDED
MECHANICAL (GENERAL): RECOMMENDED

SUITABLE RESPIRATOR: ORGANIC VAPOR TYPE.

THESE PRECAUTIONS ARE FOR ROOM TEMPERATURE HANDLING; USE AT ELEVATED TEMPERATURE REQUIRE ADDED PRECAUTIONS.
GOOD PRACTICE REQUIRES THAT GROSS AMOUNT OF ANY CHEMICAL BE REMOVED THE SKIN AS SOON AS PRACTICAL, ESPECIALLY BEFORE EATING OR SMOKING.
ENTS: NONE

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: PRODUCT IS FLAMMABLE. USE REASONABLE CARE AND CAUTION.

OTHER PRECAUTIONS: NONE KNOWN TO DOW CORNING.
COMMENTS: NONE

THESE DATA ARE OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.

PREPARED BY: JACK L. SHENEBERGER
LAST REVISION DATE: SEPTEMBER 20, 1985
PREVIOUS REVISION DATE: MARCH 19, 1984
DATE: NOVEMBER 06, 1985

(R) INDICATES REGISTERED OR TRADEMARK OF THE DOW CORNING CORPORATION.

72-62-7820-01

Ashland Chemical Company
DIVISION OF ASHLAND OIL, INC.
P. O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333

K527

Ashland

281

MATERIAL SAFETY DATA SHEET

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

003516

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

PRODUCT NAME: METHYL ETHYL KETONE
CAS NUMBER: 78 93 3

MARTIN MARIETTA CORP
P O BOX 29304
NEW ORLEANS LA 70189

ATTN: PLANT MGR./SAFETY DIR.

05 50 069 5653430-
DATA SHEET NO: 0000017-003
LATEST REVISION DATE: 01/86-86010
PRODUCT: 3540000
INVOICE: 772955
INVOICE DATE: 01/03/86
TO: MARTIN MARIETTA CORP
MICHOUD ASSEMBLY FACILITY
BLDG 103
NEW ORLEANS LA 70129

SECTION I-PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: KETONE

DOT HAZARD CLASSIFICATION: FLAMMABLE LIQUID (173.115)

SECTION II-COMPONENTS

INGREDIENT	% (BY WT)	PEL	TLV	NOTE
METHYL ETHYL KETONE	>95	200	200 PPM	

SECTION III-PHYSICAL DATA

PROPERTY	REFINEMENT	MEASUREMENT
BOILING POINT	FOR PRODUCT	175.00 DEG F (79.44 DEG C) @ 760.00 MMHG
VAPOR PRESSURE	FOR PRODUCT	70.00 MMHG @ 68.00 DEG F (20.00 DEG C)
SPECIFIC VAPOR DENSITY	AIR = 1	2.5
SPECIFIC GRAVITY		.805 - .807 @ 68.00 DEG F (20.00 DEG C)
PERCENT VOLATILES		100.00%
EVAPORATION RATE	(N-BUTYL ACETATE = 1)	5.70

SECTION IV-FIRE AND EXPLOSION INFORMATION

FLASH POINT(TCC) 23.00 DEG F (-5.00 DEG C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - 2.0%

EXTINGUISHING MEDIA: ALCOHOL FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.
ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NFPA CODES: HEALTH- 1 FLAMMABILITY- 3 REACTIVITY- 0

SECTION V-HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL 200 PPM

THRESHOLD LIMIT VALUE 200 PPM

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.
SKIN - PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, AND EVEN ASPHYXIATION.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.

FIRST AID:

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SECTION V-HEALTH HAZARD DATA (CONTINUED)

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING. KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION

SKIN CONTACT

SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE. DIKE AREA OF SPILL TO PREVENT SPREADING. PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION. CONTAMINATED ABSORBENT MAY BE DEPOSITED IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF TLV OF THE PRODUCT OR ANY COMPONENT IS EXCEEDED, A NIOSH/MSHA JOINTLY APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS UNDER SPECIFIED CONDITIONS. (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, NATURAL RUBBER, NEOPRENE

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

MINOR EMBRYOTOXIC/FETOTOXIC EFFECTS HAVE BEEN OBSERVED IN LABORATORY RATS EXPOSED TO MEK BY INHALATION AT LEVELS GREATER THAN 1000 PPM (5 TIMES THE OSHA-PEL/TWA) FOR MOST OF THE GESTATION PERIOD.

OVEREXPOSURE TO MATERIAL HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS:, LIVER ABNORMALITIES, KIDNEY DAMAGE, LUNG DAMAGE, BRAIN DAMAGE

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor. Essentially Similar to Form LSB-005-4)

2523 287

CHEMICAL NAME: ACETONE

SYNONYMS: Dimethyl Ketone, 2-Propanone; Dimethyl Ketal

CHEMICAL FAMILY: Ketones

FORMULA: CH_3COCH_3

MOLECULAR WEIGHT: 58.08

TRADE NAME AND SYNONYMS: Acetone

I. PHYSICAL DATA

BOILING POINT, 760 mm Hg	56.1 °C. (133.0 °F.)	FREEZING POINT	−94.7 °C
SPECIFIC GRAVITY (H_2O = 1)	0.7905 at 20/20 °C.	VAPOR PRESSURE at 20 °C.	186 mm.
VAPOR DENSITY (air = 1)	2.0	SOLUBILITY IN WATER, % by wt at 20 °C.	Complete
PER CENT VOLATILES BY VOLUME	99.995	EVAPORATION RATE (Butyl Acetate = 1)	14.48
APPEARANCE AND ODOR	Highly flammable liquid; sharp, penetrating, and residual odor.		

II. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)
Not applicable		

III. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	4 °F., Tag open cup	AUTOIGNITION TEMPERATURE	1,000 °F.		
FLAMMABLE LIMITS IN AIR, % by volume		LOWER	2.6	UPPER	12.8

EXTINGUISHING MEDIA	Use carbon dioxide or dry chemical for small fires. Use "alcohol"-type foam for large fires.
SPECIAL FIRE FIGHTING PROCEDURES	Dilution of burning liquid with water will effect extinguishment.
UNUSUAL FIRE AND EXPLOSION HAZARDS	None

EMERGENCY PHONE NUMBERS

Dr. C. U. Dernehl, 212/551-4785, 914/946-0646 (night)
Dr. K. S. Lane, 212/551-4787; 914/666-3656 (night)
C. P. Carpenter, Ph.D., 412/327-1020; 412/241-7896 (night)

Legal responsibility is assumed only for the fact that all studies reported here and all opinions are those of qualified experts

IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	1,000 ppm.
EFFECTS OF OVEREXPOSURE	Produces a state of stupor.
EMERGENCY AND FIRST AID PROCEDURES	Remove to fresh air. Skin contact is only a slight hazard; however, skin should be flushed with water. Moderate hazard to the eye, but liquid contact should be treated with flushing of eye with water for 15 minutes.

V. REACTIVITY DATA

STABILITY			
UNSTABLE	STABLE	CONDITIONS TO AVOID	Low temperatures.
--	✓		
INCOMPATIBILITY (Materials to avoid)		Catalysts such as $Ba(OH)_2$, NaOH, and other alkalies; sulfuric acid.	
HAZARDOUS DECOMPOSITION PRODUCTS		None	
HAZARDOUS POLYMERIZATION			
May Occur	Will not Occur	CONDITIONS TO AVOID	Low temperatures when in the presence of catalysts -- condensation will occur. If the temperature rises, reaction stops and the material will cool down.
✓	--		

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Eliminate all sources of ignition. Flush heavily with water.
WASTE DISPOSAL METHOD	Atomize into an incinerator.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)		Full face mask with organic chemical canister or supplied air.		
VENTILATION	LOCAL EXHAUST	Preferable	SPECIAL	--
	MECHANICAL (general)	Acceptable	OTHER	--
PROTECTIVE GLOVES		Rubber or vinyl-coated gloves	EYE PROTECTION	Face shield
OTHER PROTECTIVE EQUIPMENT		---		

VIII. SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING	ACETONE DANGER! Extremely flammable. Keep away from heat, sparks, and fire. Do not leave container open. Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Not for use as a drug unless clearly established as safe for that purpose. FOR INDUSTRY USE ONLY
SPECIAL HANDLING AND STORAGE CONDITIONS	Do not use copper.

UNION CARBIDE

MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form LSB-005-4)

K532

CHEMICAL NAME: METHYL ISOBUTYL KETONE

SYNONYMS: 4-Methyl-2-pentanone; hexone | CHEMICAL FAMILY: Ketones

FORMULA: $CH_3COCH_2CH(CH_3)_2$ | MOLECULAR WEIGHT: 100.16

TRADE NAME AND SYNONYMS: Methyl Isobutyl Ketone

I. PHYSICAL DATA

BOILING POINT, 760 mm. Hg	116.2 °C. (241.2 °F.)	FREEZING POINT	−84 °C.
SPECIFIC GRAVITY (H_2O = 1)	0.8020 at 20/20 °C.	VAPOR PRESSURE at 20 C.	15 mm. H
VAPOR DENSITY (air = 1)	3.5	SOLUBILITY IN WATER, % by wt at 20 °C.	1.9
PER CENT VOLATILES BY VOLUME	99.995	EVAPORATION RATE (Butyl Acetate = 1)	1.64
APPEARANCE AND ODOR	Colorless liquid; non-residual odor.		

II. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)
Not applicable		

III. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	74 °F., Tag open cup	AUTOIGNITION TEMPERATURE	854 °F.
FLAMMABLE LIMITS IN AIR, % by volume	LOWER 1.4	UPPER	7.5

EXTINGUISHING MEDIA	Use carbon dioxide or dry chemical for small fires. Use "alcohol"-type foam for large fires.
SPECIAL FIRE FIGHTING PROCEDURES	None
UNUSUAL FIRE AND EXPLOSION HAZARDS	None

EMERGENCY PHONE NUMBERS

Dr. C. U. Dernehl, 212/551-4785; 914/946-0646 (night)
Dr. K. S. Lane, 212/551-4787; 914/666-3556 (night)
C. F. Carpenter, Ph.D., 412/327-1020. 412/241-7836 (night)

Legal responsibility is assumed only for the fact that all studies reported here and all opinions are those of qualified experts

IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	100 ppm.
...S OF OVEREXPOSURE	Irritation of nose and throat. Headache, nausea, and vomiting.
EMERGENCY AND FIRST AID PROCEDURES	Move to fresh air and call a physician. If swallowed, induce vomiting and call a physician. Flush skin and eye contact with water.

V. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	
UNSTABLE	STABLE		--
--	✓		
INCOMPATIBILITY (materials to avoid)		--	
HAZARDOUS DECOMPOSITION PRODUCTS		None	
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	--
May Occur	Will not Occur		
--	✓		

VI. SPILL OR LEAK PROCEDURES

...TO BE TAKEN ...TERIAL IS RELEASED OR SPILLED	Eliminate all sources of ignition. Flush heavily with water.
WASTE DISPOSAL METHOD	Atomize into an incinerator.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)		All-purpose canister mask. Chemical cartridge respirator.		
VENTILATION	LOCAL EXHAUST	Preferable	SPECIAL	--
	MECHANICAL (general)	Acceptable	OTHER	--
PROTECTIVE GLOVES		Rubber or vinyl-coated gloves	EYE PROTECTION	Face shield
OTHER PROTECTIVE EQUIPMENT		--		

VIII. SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING	METHYL ISOBUTYL KETONE WARNING! FLAMMABLE BREATHING OF VAPOR MAY BE HARMFUL. LIQUID MAY CAUSE EYE IRRITATION. Keep away from heat, sparks, and fire. Do not leave container open. Use with adequate ventilation. Avoid prolonged or repeated breathing of vapor. Avoid contact with eyes. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. FOR INDUSTRY USE ONLY
OTHER HANDLING AND STORAGE CONDITIONS	

Ashland Chemical Company
DIVISION OF ASHLAND OIL INC.
P.O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333

MATERIAL SAFETY DATA SHEET

KS33 9 Jan '84

002857

XYLENE

ACCEPTED BY O.S.H.A. AS ESSENTIALLY SIMILIAR TO O.S.H.A. FORM 20

24-HOUR EMERGENCY TELEPHONE: 606-324-1133 (LOCATED AT ASHLAND, KENTUCKY)

ASHLAND PRODUCT NAME: XYLENE

MARTIN MARIETTA CORP
P O BOX 29304
NEW ORLEANS LA 70189

ATTN: PURCHASING/SAFETY DEPT.

DS SO 069 S653430-
DATA SHEET NO: 0004340-002
LATEST REVISION DATE: 03/79-79073
PRODUCT: 2195000
INVOICE: 271101
INVOICE DATE: 09/13/83
TO: MARTIN MARIETTA CORP
MICHOUD ASSEMBLY FACILITY
BLDG 103
NEW ORLEANS LA 70129

SECTION I-PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: AROMATIC HYDROCARBON

HAZARD CLASSIFICATION: (03) FLAMMABLE LIQUID (173.115)

SECTION II-HAZARDOUS COMPONENTS

INGREDIENT	PERCENT	PEL	TLV
XYLENE	100	100	100 PPM

SECTION III-PHYSICAL DATA

PROPERTY	REFINEMENT	MEASUREMENT
INITIAL BOILING POINT	FOR PRODUCT	279.00 DEG F (137.22 DEG C) @ 760.00 MMHG
VAPOR PRESSURE	FOR PRODUCT	5.10 MMHG @ 68.00 DEG F (20.00 DEG C)
VAPOR DENSITY	AIR = 1	3.6
SPECIFIC GRAVITY		.872 @ 60.00 DEG F (15.55 DEG C)
PERCENT VOLATILES		100.00%
EVAPORATION RATE	(ETHER = 1)	9.0

SECTION IV-FIRE AND EXPLOSION DATA

FLASH POINT 80.00 DEG F (26.66 DEG C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - 1.0%

EXTINGUISHING MEDIA: REGULAR FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

SPECIAL FIREFIGHTING PROCEDURES: SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

UNUSUAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.
NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

SECTION V-HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL 100 PPM

THRESHOLD LIMIT VALUE 100 PPM

EFFECTS OF OVEREXPOSURE: FOR PRODUCT

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.
SKIN - PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, AND EVEN ASPHYXIATION
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

51

CONTINUED ON PAGE: 2

Ashland Chemical Company

DIVISION OF ASHLAND OIL, INC.

P.O. BOX 2219 COLUMBUS, OHIO 43216 • (614) 889-3333

MATERIAL SAFETY DATA SHEET

Ashland.

SECTION V-HEALTH HAZARD DATA (CONTINUED)

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING. KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATABILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION. CONTAMINATED ABSORBENT MAY BE DEPOSITED IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF TLV OF THE PRODUCT OR ANY COMPONENT IS EXCEEDED, A NIOSH/MSHA JOINTLY APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, BUNA-N

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

OVEREXPOSURE TO MATERIAL HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS:, ANEMIA, LIVER ABNORMALITIES, KIDNEY DAMAGE, EYE DAMAGE

OVEREXPOSURE TO MATERIAL HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS:, CARDIAC ABNORMALITY

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH ASHLAND OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

Toluene
[redacted]

K556

291

MATERIAL SAFETY DATA SHEET

ACCEPTED BY O.S.H.A. AS ESSENTIALLY SIMILIAR TO O.S.H.A. FORM 20
...D CHEMICAL CO,ENVIRONMENTAL&OCCUPATIONAL SAFETY DEPT,BOX 2219,COLUMBUS,OH ...1
...-HOUR EMERGENCY TELEPHONE: 606-324-1133 (LOCATED AT ASHLAND, KENTUCKY)

****

SHLAND PRODUCT NAME: TOLUENE

MARTIN MARIETTA CORP
P O BOX 29304
NEW ORLEANS LA 70189

05 50 069 5653430-
DATA SHEET NO: 0000565-002
LATEST REVISION DATE: 11/78-78326
PRODUCT: 2185000
INVOICE: 506726
INVOICE DATE: 12/05/78
TO: MARTIN MARIETTA CORP
MICHOUD ASSEMBLY FACILITY
BLDG 103
NEW ORLEANS LA 70129

ATTN: PURCHASING/SAFETY DEPT.

*********************** SECTION I-PRODUCT IDENTIFICATION ***********************

ENERAL OR GENERIC ID: AROMATIC HYDROCARBON

AZARD CLASSIFICATION: (03) FLAMMABLE LIQUID (173.115)

*********************** SECTION II-HAZARDOUS COMPONENTS ***********************

INGREDIENT	PERCENT	TLV
...NE	100.00%	200 PPM

ACGIH RECOMMENDS A TLV OF 100 PPM (SKIN).

************************* SECTION III-PHYSICAL DATA *************************

PROPERTY	REFINEMENT	MEASUREMENT
NITIAL BOILING POINT	FOR PRODUCT	232.00 DEG F (111.11 DEG C @ 760.00 MMHG
APOR PRESSURE	FOR PRODUCT	38.00 MMHG @ 68.00 DEG F (20.00 DEG C
APOR DENSITY	AIR = 1	4.5
PECIFIC GRAVITY		.871 @ 60.00 DEG F (15.55 DEG C
ERCENT VOLATILES		100.00 %
..PORATION RATE	(ETHER = 1)	4.50

CONTINUED ON PAGE: 2

********** SECTION IV-FIRE AND EXPLOSION DATA **********

POINT(CLOSED CUP) 40.00 DEG F
(4.44 DEG C)

WER EXPLOSIVE LIMIT (PRODUCT) 1.2 %

TINGUISHING MEDIA: REGULAR FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

ZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

ECIAL FIREFIGHTING PROCEDURES: SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

USUAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT. NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

********** SECTION V-HEALTH HAZARD DATA **********

RESHOLD LIMIT VALUE: 200 PPM

TS OF OVEREXPOSURE: FOR PRODUCT

(! CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.
· PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.
EATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, AND EVEN ASPHYXIATION.
ALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

RST AID:

· ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

· IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY, GET MEDICAL ATTENTION.

· SWALLOWED: DO NOT INDUCE VOMITING, KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

· BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL ESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

CONTINUED ON PAGE: 3

********************** SECTION VI-REACTIVITY DATA **********************

'DOUS POLYMERIZATION: CANNOT OCCUR
)ITY: STABLE

NCOMPATABILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS (E.G. NITRIC ACID, PERMANGANATES, ETC.)

********************** SECTION VII-SPILL OR LEAK PROCEDURES **********************

TEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

MALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

ARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

ASTE DISPOSAL METHOD:

MALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DESTROY REMAINING MATERIAL BY BURNING IN AN IRON PAN.

ARGE SPILL: DESTROY BY LIQUID INCINERATION.
MATERIAL COLLECTED ON ABSORBENT MATERIAL MAY BE DEPOSITED IN A POSTED TOXIC SUBSTANCE LANDFILL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

****************** SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED ******************

ESPIRATORY PROTECTION: IF TLV OF THE PRODUCT OR ANY COMPONENT IS EXCEEDED, A NIOSH/MESA JOINTLY APPROVED SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACE PIECE OPERATED IN PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE IS ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MESA RESPIRATORS UNDER SPECIFIED CONDITIONS. (SEE YOUR SAFETY EQUIPMENT SUPPLIER).

ENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL) AND/OR LOCAL EXHAUST VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

ROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, BUNA-N

YE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (SEE YOUR SAFETY EQUIPMENT SUPPLIER).

PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

CONTINUED ON PAGE: 4

************ SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS ***************

NERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED ONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATA SHEET MUST BE OBSERVED.

IVEREXPOSURE TO MATERIAL HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS:, LIVER ABNORMALITIES, KIDNEY DAMAGE, LUNG DAMAGE, SPLEEN DAMAGE

IVEREXPOSURE TO MATERIAL HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS:, LIVER ABNORMALITIES

IE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH ASHLAND OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

31

ISOCHEM PRODUCTS COMPANY
SUBSIDIARY OF
[R]OHM AND HAAS ADVANCED MATERIALS COMPANY
[R]OCK STREET
[PR]OV[IDENCE], RHODE ISLAND 02945

EMERGENCY TELEPHONE
(401) 723-2100
or
(215) 592-3000

HAZARD RATING: Fire 3, Toxicity 2, Reactivity 2, Special
4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT
* = SEE SECTION IV

MATERIAL SAFETY DATA SHEET

MATERIAL	CODE	KEY	DOT HAZARD CLASS
RESIN PE BOND MM IP	1034	398383-8	FLAMMABLE LIQUID
	DATE ISSUED: 9/12/85		

FORMULA	CHEMICAL NAME OR SYNONYMS
NA	

I — APPROXIMATE COMPOSITIONAL INFORMATION

	APPROX. WEIGHT %	TWA, TLV R&H	OSHA	ACGIH	
Proprietary mixture containing unsaturated polyester in styrene monomer.					
Styrene monomer (CAS 100-42-5)		25	100	50	p

II — PHYSICAL PROPERTY INFORMATION

APPEARANCE, ODOR, pH			VISCOSITY
Tan, grainy, opaque liquid; persistent unpleasant odor			~50,000 cps @ 25C
MELTING OR FREEZING POINT	**BOILING POINT**	**VAPOR PRESSURE mm Hg**	**VAPOR DENSITY (AIR = 1)**
No data	145C/293F init. b.p.	<5 @ 20C	3.6
SOLUBILITY IN WATER	**PERCENT VOLATILE (BY WEIGHT)**	**SPECIFIC GRAVITY (WATER = 1)**	**EVAPORATION RATE (BUTYL ACETATE = 1)**
Negligible/0.029%	<30	1.40	<1

III — FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT	AUTO IGNITION TEMPERATURE	LOWER EXPLOSION LIMIT (%)	UPPER EXPLOSION LIMIT (%)
31C/88F TCC	490C/914F	1.1	6.1

EXTINGUISHING MEDIA
[X] FOAM [ ] ALCOHOL FOAM [X] CO2 [X] DRY CHEMICAL [X] WATER SPRAY [ ] OTHER

SPECIAL FIRE FIGHTING PROCEDURES
Wear MSHA/NIOSH approved, pressure demand, self-contained breathing apparatus. Use wate[r] spray to cool fire-exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS
Heat can cause polymerization; sealed containers may rupture explosively.

IV — HEALTH HAZARD INFORMATION

ISOCHEM PRODUCTS RECOMMENDED WORK PLACE EXPOSURE LIMITS
TWA: See Section I; STEL = 50 ppm for styrene.

EFFECTS OF OVEREXPOSURE
INHALATION: High vapor concentration will irritate respiratory tract and cause narcosi[s]. The odor threshold for styrene is about 1 ppm in air.
EYE CONTACT: Liquid can cause irritation and possible slight corneal injury.
SKIN CONTACT: Moderate irritation on prolonged or repeated contact or when confined to

EMERGENCY AND FIRST AID PROCEDURES
INHALATION: Move subject to fresh air. Give oxygen if breathing is difficult, artific[ial] respiration if breathing has stopped.

EYE AND SKIN CONTACT: Flush eyes with plenty of water for at least 15 minutes and get medical attention; wash skin thoroughly with soap and water; remove and wash clothing b[efore] reuse.

INGESTION: If swallowed dilute by giving 2 glasses of water to drink and call physicia[n]

V – REACTIVITY INFORMATION

STABILITY	CONDITIONS TO AVOID
[x] STABLE [ ] UNSTABLE	Elevated temperatures (>150F) and ignition sources. See Section I.

HAZARDOUS DECOMPOSITION PRODUCTS

... under normal use conditions.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
[ ] MAY OCCUR [ ] WILL NOT OCCUR	Oxidation/reduction catalysts; total absence of oxygen; alkylation catalysts (BF3, AlCl3, H2SO4)

INCOMPATIBILITY (MATERIALS TO AVOID)	
[ ] WATER [x] OTHER	Ferric and Al chlorides, chlorine, copper and copper alloys, acids, bases, and oxidizing agents.

VI – SPILL OR LEAK PROCEDURE INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate ignition sources. Evacuate the spill area and wear MSHA/NIOSH approved respirator suitable for vapor concentration encountered. Dike the spill with inert material (sand, earth, fuller's earth, etc.) and if appropriate transfer the liquid and solid diking materia. to separate containers for recovery or disposal. Remove contaminated clothing promptly and wash affected skin areas with soap and water. Wash clothing before reuse. Keep spill out o· all sewers and open bodies of water.

WASTE DISPOSAL METHODS For discard this is a listed hazardous waste, RCRA (D-001). Reportable quantity 1000 lbs. (CWA Sec. 311). In compliance with local, state and federal regulations incinerate contaminated diking material.

VII – SPECIAL PROTECTION INFORMATION

VENTILATION TYPE

Explosion-proof exhaust ventilation at point of vapor or mist release.

RESPIRATORY PROTECTION

... required if good ventilation is maintained. Wear respirator (MSHA/NIOSH-approved or ...valent) suitable for concentrations and types of air contaminants encountered.

PROTECTIVE GLOVES	EYE PROTECTION
Impervious	Splashproof goggles (ANSI Z87.1)

OTHER PROTECTIVE EQUIPMENT

Impervious apron; eyewash facility; emergency shower.

VIII – STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
max. 32C/90F min.	x			

Indoor storage of flammable liquids should be limited to approved areas equipped with automatic sprinklers. Ground all containers when pouring or transferring. Avoid storage for long periods of time.

IX – TOXICITY INFORMATION

Oral LD50 rat: 5000 mg/kg; skin irritation rabbit: slight (2.4/8.0)
Inhalation LC50 rat: 2500 ppm/4-hour exposure; eye irritation rabbit: slight (10.3/11.0)
Inhalation LCLo human: 10,000 ppm/30 minutes exposure
At high dosage levels (600 and 1000 ppm) styrene vapors gave evidence of increased incidence of tumors in laboratory test animals (rats).

X – MISCELLANEOUS INFORMATION

If a temperature rise or other indication of polymerization is observed, it is imperative tha the styrene monomer be cooled. It may be necessary to spray the container with water. t-Butyl catechol inhibitor should be added with thorough mixing.

Footnote to Sec. I: NE = None established

NA = NOT APPLICABLE C = CEILING VALUE	KEY 890383-8	DATE OF ISSUE 9/12/85	SUPERSEDES NEW

MATERIAL SAFETY DATA SHEET

UNOCAL

UNOCAL CHEMICALS DIVISION
PETROCHEMICALS GROUP

Product Name: 140 SOLVENT 66/3
Product Code No: 11106

Issue Date: 7/23/86

MANUFACTURER:	Transportation Emergencies: Call CHEMTREC (800) 424-9300 Cont. U.S. (202) 483-7616 (Collect) from Alaska & Hawaii Health Emergencies: CALL LOS ANGELES POISON INFORMATION CENTER (24 hrs.) (213) 664-2121
UNOCAL CHEMICALS DIVISION UNION OIL COMPANY OF CALIFORNIA 1345 N. MEACHAM SCHAUMBURG, ILLINOIS 60196 CONTACT FOR FURTHER INFORMATION: MSDS COORDINATOR (312) 490-2500	

PRODUCT IDENTIFICATION

PRODUCT NAME: STADDARD SOLVENT
SYNONYMS: AMSCO SOLV 1106
GENERIC NAME: VOLATILE SOLVENT
CHEMICAL FAMILY: HYDROCARBON MIXTURE
DOT PROPER SHIPPING NAME: PETROLEUM NAPHTHA
ID NUMBER: UN1255
DOT HAZARD CLASSIFICATION: COMBUSTIBLE LIQUID
CAS NUMBER: 64742-47-8

DISTRIBUTED BY
Magnolia Chemicals & Solvents, Inc. Industrial Chemicals.
PO BOX 10278 NEW ORLEANS, LA. 70181-0278
TELEPHONE 504 733-6600

SECTION I - HAZARDOUS INGREDIENTS/EXPOSURE LIMITS	CAS NO.	TLV	UNITS	AGENCY	TYPE
STADDARD SOLVENT	64742-47-8	NOT ESTABLISHED			

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

xxxEMERGENCYxxx
Have physician call LOS ANGELES POISON INFORMATION CENTER (24 hrs.) (213) 664-2121

EYE CONTACT:

IF IRRITATION OR REDNESS FROM EXPOSURE TO VAPORS DEVELOPS, MOVE VICTIM AWAY FROM EXPOSURE AND INTO FRESH AIR. IF IRRITATION OR REDNESS PERSISTS, SEEK MEDICAL ATTENTION. FOR DIRECT CONTACT, FLUSH THE AFFECTED EYE(S) WITH CLEAN WATER. SEEK MEDICAL ATTENTION.

SKIN CONTACT:

REMOVE CONTAMINATED CLOTHING. CLEANSE AFFECTED AREA(S) THOROUGHLY BY WASHING WITH MILD SOAP AND WATER. IF IRRITATION OR REDNESS DEVELOPS AND PERSISTS, SEEK MEDICAL ATTENTION.

Product Name: STADDARD SOLVENT
Product Code No: 11106

SECTION II - EMERGENCY AND FIRST AID PROCEDURES ***EMERGENCY***
Have physician call LOS ANGELES POISON INFORMATION CENTER (24 hrs.) (213) 664-212

INHALATION (BREATHING):

IF IRRITATION OF NOSE OR THROAT DEVELOPS, MOVE VICTIM AWAY FROM SOURCE OF EXPOSURE AND INTO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. IF VICTIM IS NOT BREATHING, ARTIFICIAL RESPIRATION SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL. IF BREATHING DIFFICULTIES DEVELOP, OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL. SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION (SWALLOWING):

ASPIRATION HAZARD: DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. IF VICTIM IS DROWSY OR UNCONSCIOUS, PLACE ON THE LEFT SIDE WITH THE HEAD DOWN. IF POSSIBLE, DO NOT LEAVE VICTIM UNATTENDED. SEEK MEDICAL ATTENTION.

SECTION III - HEALTH HAZARDS/ROUTES OF ENTRY

EYE CONTACT:

THIS PRODUCT MAY CAUSE EYE IRRITATION. DIRECT CONTACT WITH THE LIQUID OR EXPOSURE TO ITS VAPORS OR MISTS MAY CAUSE BURNING, TEARING AND REDNESS.

SKIN CONTACT:

THIS PRODUCT MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED EXPOSURE TO THIS MATERIAL MAY CAUSE REDNESS AND BURNING, DRYING AND CRACKING OF THE SKIN AND DERMATITIS. PERSONS WITH PRE-EXISTING SKIN DISORDERS MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS MATERIAL.

INHALATION (BREATHING):

INHALATION OF EXCESSIVE CONCENTRATIONS OF VAPORS OR MISTS MAY CAUSE: IRRITATION OF THE NOSE AND THROAT. SIGNS OF NERVOUS SYSTEM DEPRESSION (E.G., DROWSINESS, DIZZINESS, LOSS OF COORDINATION, AND FATIGUE). PERSONS WITH IMPAIRED LUNG FUNCTION OR ASTHMA-LIKE CONDITIONS MAY EXPERIENCE ADDITIONAL BREATHING DIFFICULTIES DUE TO THE IRRITANT PROPERTIES OF THIS MATERIAL.

INGESTION (SWALLOWING):

INGESTION OF EXCESSIVE QUANTITIES MAY CAUSE: IRRITATION OF THE DIGESTIVE TRACT. SIGNS OF NERVOUS SYSTEM DEPRESSION (E.G., DROWSINESS, DIZZINESS, LOSS OF COORDINATION, AND FATIGUE). ASPIRATION HAZARD - THIS MATERIAL CAN ENTER LUNGS DURING SWALLOWING OR VOMITING AND CAUSE LUNG INFLAMMATION AND DAMAGE.

COMMENTS:

THIS SUBSTANCE HAS NOT BEEN IDENTIFIED AS A CARCINOGEN OR PROBABLE CARCINOGEN BY NTP, IARC OR OSHA.

SECTION IV - SPECIAL PROTECTION INFORMATION

VENTILATION:

IF CURRENT VENTILATION PRACTICES ARE NOT ADEQUATE FOR MINIMIZING EXPOSURES, ADDITIONAL VENTILATION OR EXHAUST SYSTEMS MAY BE REQUIRED. WHERE EXPLOSIVE MIXTURES MAY BE PRESENT, SYSTEMS SAFE FOR SUCH LOCATIONS SHOULD BE USED.

SECTION IV - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

RESPIRATORY PROTECTION MAY BE NECESSARY TO MINIMIZE EXPOSURE TO VAPORS OR GASES. DEPENDING ON THE NATURE AND CONCENTRATION OF THE AIRBORNE MATERIAL, USE A RESPIRATOR OR GAS MASK WITH APPROPRIATE CARTRIDGES AND CANNISTERS (NIOSH APPROVED, IF AVAILABLE) OR SUPPLIED AIR EQUIPMENT.

PROTECTIVE GLOVES:

THE USE OF GLOVES IMPERMEABLE TO THE SPECIFIC MATERIAL HANDLED IS ADVISED TO PREVENT SKIN CONTACT AND POSSIBLE IRRITATION.

EYE PROTECTION:

APPROVED EYE PROTECTION TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT, IRRITATION OR INJURY IS RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT:

IT IS SUGGESTED THAT A SOURCE OF CLEAN WATER BE AVAILABLE IN WORK AREA FOR FLUSHING EYES AND SKIN. IMPERVIOUS CLOTHING SHOULD BE WORN AS NEEDED.

SECTION V - REACTIVITY DATA

STABILITY:

STABLE

INCOMPATIBILITY (MATERIALS TO AVOID):

THIS PRODUCT IS INCOMPATIBLE WITH STRONG ACIDS OR BASES, OXIDIZING AGENTS AND SELECTED AMINES.

HAZARDOUS DECOMPOSITION PRODUCTS:

THERMAL DECOMPOSITION IN THE PRESENCE OF AIR MAY YIELD CARBON MONOXIDE AND/OR CARBON DIOXIDE.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR

SECTION VI - SPILL OR LEAK PROCEDURES

HIGHWAY OR RAILWAY SPILLS
Call CHEMTREC (800) 424-9300 Cont. U.S.
(Collect) (202) 483-7616 from Alaska & Hawaii

PRECAUTIONS IN CASE OF RELEASE OR SPILL:

STAY UPWIND AND AWAY FROM SPILL. KEEP ALL SOURCES OF IGNITION AND HOT METAL SURFACES AWAY FROM SPILL. IF SPILL IS INDOORS, VENTILATE AREA OF SPILL. FOAM, ESPECIALLY HIGH EXPANSION FOAM, MAY BE USED TO SUPPRESS VAPORS. KEEP OUT OF DRAINS, SEWERS OR WATERWAYS. USE SAND OR OTHER INERT MATERIAL TO DAM AND CONTAIN SPILL. DO NOT FLUSH AREA WITH WATER. FOR SMALL SPILLS, DO NOT FLUSH WITH WATER; USE ABSORBANT PADS. CALL SPILL RESPONSE TEAM IF LARGE SPILL. NOTIFY APPROPRIATE STATE/LOCAL AGENCIES.

WASTE DISPOSAL METHOD:

DISPOSE OF PRODUCT IN ACCORDANCE WITH LOCAL, COUNTY, STATE, AND FEDERAL REGULATIONS.

SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS:

KEEP CONTAINERS TIGHTLY CLOSED. KEEP CONTAINERS COOL, DRY, AND AWAY FROM SOURCES OF IGNITION. USE AND STORE THIS PRODUCT WITH ADEQUATE VENTILATION. AVOID INHALATION OF VAPORS AND PERSONAL CONTACT WITH THE PRODUCT. USE GOOD PERSONAL HYGIENE PRACTICE. "EMPTY" CONTAINERS RETAIN RESIDUE (LIQUID AND/OR VAPOR) AND CAN BE DANGEROUS. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. "EMPTY" DRUMS SHOULD BE COMPLETELY DRAINED, PROPERLY BUNGED AND PROMPTLY SHIPPED TO THE SUPPLIER OR A DRUM RECONDITIONER. ALL OTHER CONTAINERS SHOULD BE DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER AND IN ACCORDANCE WITH GOVERNMENTAL REGULATIONS. BEFORE WORKING ON OR IN TANKS WHICH CONTAIN OR HAVE CONTAINED THIS PRODUCT, REFER TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ANSI Z49.1, AND OTHER GOVERNMENTAL AND INDUSTRIAL REFERENCES PERTAINING TO CLEANING, REPAIRING, WELDING, OR OTHER CONTEMPLATED OPERATIONS.

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

		HAZARD RANKING		
NFPA HAZARD CLASS	HEALTH HAZARD: 1 FLAMMABILITY: 2 REACTIVITY: 0 OTHER: -	0 = LEAST 1 = SLIGHT 2 = MODERATE 3 = HIGH 4 = EXTREME	HMIS HAZARD CLASS	HEALTH: 1 FLAM: 2 REACT: 0 P.P.E.: -

LOWER EXPLOSIVE LIMIT (% VOL.)	UPPER EXPLOSIVE LIMIT (% VOL.)
1.0	7.0

FLASH POINT

141, TCC F

EXTINGUISHING MEDIA:

SMALL FIRES: EXTINGUISH WITH DRY CHEMICAL, CO2 OR FOAM. LARGE FIRES: THE USE OF DRY CHEMICAL OR FOAM IS RECOMMENDED. WATER MAY BE AN INEFFECTIVE EXTINGUISHING AGENT.

FIRE & EXPLOSION HAZARDS:

THIS MATERIAL IS COMBUSTIBLE AND MAY BE IGNITED BY HEAT OR FLAME. THIS MATERIAL WILL BURN, BUT WILL NOT IGNITE READILY.

FIRE FIGHTING PROCEDURES:

THE USE OF A SCBA IS RECOMMENDED FOR FIRE FIGHTERS. WATER SPRAY MAY BE USEFUL IN MINIMIZING VAPORS AND COOLING CONTAINERS EXPOSED TO HEAT AND FLAME. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES.

SECTION IX - PHYSICAL DATA

APPROX. BOILING POINT	VAPOR DENSITY (AIR = 1)	VAPOR PRESSURE
367 TO 405 F	5.2	NEGLIGIBLE

EVAPORATION RATE (N-BUTYL ACETATE = 1)	% VOLATILE	% SOLUBILITY IN WATER
0.08	100%	NEGLIGIBLE (< 5%)

SPECIFIC GRAVITY (TEMP/TEMP)	APPEARANCE	ODOR
0.772 (60F/60F)	CLEAR, LITTLE IF ANY COLOR	CHARACTERISTIC

SECTION XI - DOCUMENTARY INFORMATION

ISSUE DATE: 7/23/86 PRODUCT CODE NO. 11106

PREV. DATE: 10/20/80 PREV. PROD. CODE NO. 1106

MSDS NO: 6316 PREV. MSDS NO: 858

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

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72-62-7920-01

Ashland Chemical Company
DIVISION OF ASHLAND OIL, INC.
P. O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333

MATERIAL SAFETY DATA SHEET

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

AUG 2 6 1985 Ashland 539

Received 26 Aug '85

000060 DIESEL FUEL #2

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

PRODUCT NAME: DIESEL FUEL #2
CAS NUMBER: 6E+76 34 6

MARTIN MARIETTA AEROSPACE
ATTN: MONTY HERR
DEPARTMENT 3733
P.O. BOX 29304
NEW ORLEANS, LA 70189

05 BS 002 013174-2-217
DATA SHEET NO: 0013932-302
LATEST REVISION DATE: 09/84-84272
PRODUCT:
INVOICE: REQST
INVOICE DATE: 08/20/85
TO:

SECTION I-PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: HYDROCARBON

HAZARD CLASSIFICATION: (10) COMBUSTIBLE (173.115)

SECTION II-HAZARDOUS COMPONENTS

INGREDIENT	PERCENT	PEL	TLV		S
ALIPHATIC PETROLEUM DISTILLATES	>95	500		PPM	(1)

(1): NIOSH RECOMMENDS A LIMIT OF 100 MG/CUM - 8 HOUR TIME WEIGHTED AVERAGE.

SECTION III-PHYSICAL DATA

PROPERTY	REFINEMENT	MEASUREMENT
INITIAL BOILING POINT	FOR PRODUCT	330.00 DEG F (165.55 DEG C) @ 760.00 MMHG
VAPOR PRESSURE	FOR PRODUCT	< 2.00 MMHG @ 77.00 DEG F (25.00 DEG C)
VAPOR DENSITY	UNAVAILABLE	
SPECIFIC GRAVITY		LESS THAN WATER
PERCENT VOLATILES		10-30 %
EVAPORATION RATE		SLOWER THAN ETHER

SECTION IV-FIRE AND EXPLOSION DATA

FLASH POINT 140.00 DEG F
(60.00 DEG C)

EXPLOSIVE LIMIT UNAVAILABLE

EXTINGUISHING MEDIA: CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

SPECIAL FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE WHEN FIGHTING FIRES.

WATER OR FOAM MAY CAUSE FROTHING WHICH CAN BE VIOLENT AND POSSIBLY ENDANGER THE LIFE OF THE FIREFIGHTER, ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT, BURNING LIQUID.

UNUSUAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY HEAT, PILOT LIGHTS, OTHER FLAMES AND IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

NFPA CODES: HEALTH- 2 FLAMMABILITY- 2 REACTIVITY- 0

SECTION V-HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL 500 PPM

SEE SECTION II

EFFECTS OF OVEREXPOSURE: FOR PRODUCT

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.
SKIN - PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, AND EVEN ASPHYXIATION.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

 CONTINUED ON PAGE 2

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SECTION V-HEALTH HAZARD DATA (CONTINUED)

FIRST AID:

IF ON SKIN: THOROUGHLY WASH SKIN WITH WATERLESS HAND CLEANER, THEN SOAP AND WATER, WHETHER PRODUCT HAS CONTACTED BODY OR NOT. IMMEDIATELY DISCARD CONTAMINATED CLOTHING AND SHOES.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING. KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ELIMINATE ALL SOURCES OF IGNITION SUCH AS FLARES, FLAMES (INCLUDING PILOT LIGHTS), AND ELECTRICAL SPARKS. ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE. DIKE AREA OF SPILL TO PREVENT SPREADING. PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION. CONTAMINATED ABSORBENT MAY BE DEPOSITED IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF TLV OF THE PRODUCT OR ANY COMPONENT IS EXCEEDED, A NIOSH/MSHA JOINTLY APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS UNDER SPECIFIED CONDITIONS. (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, NEOPRENE, NITRILE RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

WHEN PRODUCTS OF SIMILIAR COMPOSITION WERE TESTED ON LABORATORY ANIMALS, WEAK TO MODERATELY POSITIVE RESULTS WERE FOUND IN MOUSE SKIN CANCER STUDIES, MIXED AND INCONSISTENT RESULTSWERE FOUND IN MUTAGENICITY STUDIES, AND NEGATIVE RESULTS WERE FOUND IN RAT TERATOLOGY STUDIES.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH ASHLAND OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

MATERIAL SAFETY DATA SHEET

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DEFINITIONS

THIS DEFINITION PAGE IS INTENDED FOR USE WITH MATERIAL SAFETY DATA SHEETS SUPPLIED BY THE ASHLAND CHEMICAL COMPANY. QUESTIONS CONCERNING THESE SHEETS SHOULD BE DIRECTED TO THE ENVIRONMENTAL AND OCCUPATIONAL SAFETY DEPARTMENT.

SECTION I PRODUCT IDENTIFICATION

PRODUCT CLASS: GENERAL OR GENERIC IDENTIFICATION.

HAZARDOUS CLASSIFICATION: PRODUCT MEETS DOT CRITERIA FOR HAZARDS LISTED.

SECTION II HAZARDOUS COMPONENTS

A HAZARDOUS INGREDIENT IS ONE WHICH MEETS ONE OR MORE OF THE FOLLOWING CRITERIA:

1. IT IS LISTED IN THE ANNUAL REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, OR IT IS KNOWN TO BE TOXIC WITHIN THE PARAMETERS OF THAT REGISTRY.

AND/OR

2. IT HAS A OSHA ESTABLISHED, 8-HOUR TIME-WEIGHTED AVERAGE PERMISSABLE EXPOSURE LIMIT (PEL) OR ACCEPTABLE CEILING (C), OR AN AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS' (ACGIH) THRESHOLD LIMIT VALUE, AND BY NATURE OF THE PRODUCT OR ITS KNOWN USE, IT IS LIKELY TO BECOME AIRBORNE.

AND/OR

3. IT CONTRIBUTES TO ONE OR MORE OF THE FOLLOWING HAZARDS OF THE PRODUCT:
   - A. FLASHPOINT BELLOW 200 DEG F (CC), OR SUBJECT TO SPONTANEOUS HEATING OR DECOMPOSITION.
   - B. CAUSES SKIN BURNS. (DOT)
   - C. STRONG OXIDIZING AGENT. (DOT)
   - D. SUBJECT TO HAZARDOUS POLYMERIZATION.

EACH INGREDIENT MEETING ONE OR MORE OF THE ABOVE CRITERIA IS LISTED IN SECTION II IF PRESENT AT A LEVEL AT LEAST GREATER THAN ONE PERCENT. INGREDIENTS WHICH ARE CLAIMED TO BE CARCINOGENS, TERATOGENS, MUTAGENS, OR CAUSATIVE AGENTS OF OTHER REPRODUCTIVE DISORDERS ARE LISTED IF KNOWN OR BELIEVED TO BE PRESENT, PROVIDED THAT THE DATA SUPPORTING SUCH CLAIMS IS CONSIDERED VALID.

EACH HAZARDOUS INGREDIENT IS LISTED BY CHEMICAL, GENERIC, OR PROPRIETARY NAME. ITS LEVEL IN THE PRODUCT IS EXPRESSED AS 1% OR LESS, 1-10%, 10-30%, 30-60%, OR GREATER THAN 60%, OR BY OTHER MEANS.

SECTION III PHYSICAL DATA

INITIAL BOILING POINT: IF LIQUID AT 68 DEG F.

VAPOR PRESSURE: IF LIQUID AT 68 DEG F OR WHICH SUBLIMES.

VAPOR DENSITY: FOR VOLATILE PORTION OF PRODUCT.

SPECIFIC GRAVITY: IF SPECIFIC GRAVITY OF PRODUCT IS NOT KNOWN, INDICATED AS <1, =1, OR >1.

PERCENT VOLATILES: PERCENTAGE OF MATERIAL WITH INITIAL BOILING POINT BELOW 425 DEG F.

EVAPORATION RATE: INDICATED AS FASTER OR SLOWER THAN ETHYL ETHER, UNLESS STATED.

SECTION IV FIRE AND EXPLOSION HAZARDS

FLASH POINT: CLOSED CUP.

LOWER EXPLOSION LIMIT: INDICATED FOR COMPONENT WITH LOWEST VALUE.

HAZARDOUS DECOMPOSITION PRODUCTS: KNOWN HAZARDOUS PRODUCTS RESULTING FROM HEATING, BURNING, ETC., OR REACTED RAW MATERIALS WHICH MAY ARISE THROUGH HEATING, BURNING, ETC.

SPECIAL FIREFIGHTING PROCEDURES: INDICATES EQUIPMENT TO PROTECT FIREMEN FROM TOXIC PRODUCTS OF COMBUSTION OR IF WATER IS NOT TO BE USED.

UNUSUAL FIRE AND EXPLOSION HAZARDS: HAZARDS NOT COVERED BY OTHER SECTIONS OF THIS REPORT ARE SHOWN HERE.

SECTION V HEALTH HAZARD DATA

RECIPIENTS OF THIS DATA SHEET SHOULD CONSULT THE OSHA SAFETY AND HEALTH STANDARDS (29 CFR 1910), PARTICULARLY SUBPART G - OCCUPATIONAL HEALTH AND ENVIRONMENTAL CONTROL, AND SUBPART I - PERSONAL PROTECTIVE EQUIPMENT, FOR GENERAL GUIDANCE ON CONTROL OF POTENTIAL OCCUPATIONAL HEALTH HAZARDS.

PERMISSIBLE EXPOSURE LEVEL: OSHA ESTABLISHED PEL--IF NONE AVAILABLE, ADOPTED VALUE.

EFFECTS OF OVEREXPOSURE: GIVEN IN GENERAL TERMS, LOCAL AND SYSTEMIC EFFECTS TO THE EYES, SKIN, IF MATERIAL IS INHALED, UNLESS NOT APPLICABLE DUE TO PHYSICAL FORM OF PRODUCT.

SECTION VI REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION RESULTING IN A LARGE RELEASE OF ENERGY.

STABILITY: CONDITIONS TO AVOID IF UNSTABLE UNDER NORMAL CIRCUMSTANCES.

INCOMPATIBILITY: MATERIALS TO AVOID.

SECTION VII SPILL OR LEAK PROCEDURES

REASONABLE PRECAUTIONS TO BE TAKEN AND THE METHODS OF CLEAN-UP TO BE USED IN THE EVENT OF SPILLAGE OF THE PRODUCT. CONSULT FEDERAL, STATE AND LOCAL REGULATIONS FOR ACCEPTED PROCEDURES AND ANY REPORTING OR NOTIFICATION REQUIREMENTS.

SECTION VIII PROTECTIVE EQUIPMENT TO BE USED

THIS SECTION INDICATES PROTECTIVE EQUIPMENT TO BE USED WHEN HANDLING THE PRODUCT.

SECTION IX SPECIAL PRECAUTIONS OR OTHER COMMENTS

THIS SECTION IS TO COVER ANY RELEVANT POINTS NOT PREVIOUSLY MENTIONED.

ADDITIONAL COMMENTS

ASHLAND WISHES TO INFORM YOU THAT SERIOUS ACCIDENTS HAVE RESULTED FROM THE MISUSE OF "EMPTIED" CONTAINERS (DRUMS, 1 AND 5 GALLON PAILS, ETC.). REFER TO SECTIONS IV AND IX.

WE RECOMMEND THAT CONTAINERS BE EITHER PROFESSIONALLY RECONDITIONED FOR REUSE BY CERTIFIED FIRMS OR PROPERLY DISPOSED OF BY CERTIFIED FIRMS TO HELP REDUCE THE POSSIBILITY OF AN ACCIDENT. DISPOSAL OF CONTAINERS SHOULD BE IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS. "EMPTY" DRUMS SHOULD NOT BE GIVEN TO INDIVIDUALS.

update (8)

8902199

MCDS Document #

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

APR 25 1989 SALES (504) 362-3987
PLANT (504) 631-3161

MSP CODE: ______

SUBMITTED BY: SPECIAL PROJECTS DIVISION
GULF COAST ENVIRONMENTAL SERVICES, INC.

Generator Name: USNASA/Martin Marietta
Facility Address: 13800 Old Gentilly Rd.
City, State, Zip: New Orleans, LA 70129
Technical Contact: K.M. Zeller
Title: Environmental Engineer
Telephone NO. (504) 257-3433 EXT: ——
Facility EPA ID #: LA4800014587

Bill To: Gulf Coast Environmental
Company Contact: Leon Marks
Container Size: 55gal (or 85gal) with aerosol can mixture ←
EPA Waste No.: D001
Generating Process: Manufacturing
Common Name of Waste: Aerosol cans
Rate of Generation: 2 (Quan) dr. (Units) PER month (Time Interval)
Volume in Storage: 4 (Quan) dr. (Units) IN 55gal. drum (Container Size and Type)
Is Waste DOT Hazardous: [X] YES [ ] NO
Proper DOT Shipping Name: Waste Compressed Gas, n.o.s.
Hazard Class: Flammable Gas ID No.: UN 1954
Transportation Equipment: Truck
Placarding: Flammable

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

Aerosol cans	100.0 %
(See MSDS's for various types)	%

PHYSICAL DESCRIPTION

Physical State: [ ] Liquid [ ] Semi-solid [X] Solid
Phases/Layering: [ ] Uni-Layer [ ] Bilayer [X] Multilayer
Viscosity: [X] High [ ] Medium [ ] Low
Type of Solids: [ ] Organic [ ] Inorganic [X] Mixed
Total Solids (wt. %): 99+ Suspended Solids (wt. %): —
BTU/lb: <10 % Ash Content: 99+ % Water (by weight): ______
Flash Point (°F): VARIES Type: ______
Specific Gravity: —
Boiling Point, (°C): — Freezing Point, (°C): —
Vapor Pressure (mm Hg @ 24°C): —
pH (Avg): neutral (Range): — to —
Total Alkalinity/Acidity (%): —
Odor: Mild
Color: Various

METALS (EP Toxicity Test, mg/1)

Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se): NONE SUSPECTED
Silver (Ag), Copper (Cu), Nickel (Ni), Zinc (Zn): NONE SUSPECTED

INORGANICS (mg/1 or ppm)

Total CN, Free CN, Sulfide, Chloride, Bisulfite, Sulfite, Sulfate, Phosphate, Flourine, Bromine, Chlorine: NONE SUSPECTED
Iodine, Asbestos: NONE SUSPECTED

HAZARDOUS PROPERTIES

[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymeriable
[ ] Radioactive [ ] Pesticide Residuals [X] Ignitable
[ ] Corrotive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ______

ORGANICS (mg/1 or ppm)

Endrin, Methoxychlor, Toxaphene, 2,4-D, 2,4,5-T, Phenol(ics), PCBs, Dioxin, TOC: NONE SUSPECTED
Organohalide, Mercaptans: NONE SUSPECTED

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: See MSDS'S

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE: 4-24-89 GENERATOR'S SIGNATURE: Karen M. Zeller

MARTIN MARIETTA
MATERIALS CHARACTERIZATION
FOR MARINE SHALE PROCESSORS
AEROSOL CANS

MSDS #	HM OR HS	RQ	CONTAINING OR LAST CONTAINED	HAZARD CLASS	ID #	EPA #	ORIGINAL MATERIAL - HAZARDOUS PROPERTIES
	HS	100	Waste Compressed Gas, NOS	Flammable Gas	UN1954	D001	Ignitable
1828			3M-Spray Adhesive	Flammable Gas			
59			Clear Acrylic 76229	Flammable Gas			
246			WD-40	Flammable Gas			
60			Rust-Oleum Top-Coat	Flammable Gas			
	-		and a mixture of other non-flammable aerosols	-			
			Waste Compressed Gas, NOS	Non-Flammable Gas	UN1956		
3958			SKC-NF/ZC-7B	Non-Flammable Gas			
1696			SKC-NF/ZC-7	Non-Flammable Gas			
417			Molykote G - Rapid Spray	Non-Flammable Gas			
414			CRC 2-26	Non-Flammable Gas			
395			Great Stuff	Non-Flammable Gas			
326			Camie 2000	Non-Flammable Gas			
75			Release All #30	Non-Flammable Gas			

1637u

AEROSOL CANS

MSDS	HM or HS	RQ	Contains or Last Contained	Hazard Class	ID#	EPA #	Hazardous Properties
			Waste Compressed Gas, NOS	Non-Flammable gas	UN1956		
3958			SKC-NF/ZC-7B	1,1,1-trichloroethane			
1696			SKC-NF/ZC-7	1,1,1-trichloroethane			Placard Nonflam. Gas unless w/ Flamm. Gas or Flam. Gas
417			Molykote G-Rapid Spray	1,1,1 trichloroethane methylene chloride			
414			CRC 2-26	1,1,1-trichloroethane			
395			Great Stuff	dichlorodifluoro-methane			
326			Camie 2000	Perchloroethylene Propane			
75			Release All #30	Methylene Chloride 1,1,1-trichloroethane			
	HS	100	Waste Compressed Gas, NOS	Flammable gas	UN1954	(D001)	Ignitable Placard/Label Flam. Gas
1828			3M-Spray Adhesive 76	meth. lene Chloride (NON Flam) propane, isobutane			
59			Clear Acrylic 76229	toluene, xylene, acetone methylene chloride (non-flam) propane, isobotrane			
246			WD-40	petroleum distillates			
60			Rust-Oleum Top-coats	toluene, xylene, methylene chloride, methyl ethyl Ketone, ethylene glycol monobutyl ether, naptha			

MATERIAL SAFETY DATA SHEET

NPCA 1-78

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U.S. Department of Labor "Essentially Similar" to Form OSHA-20)

MMCO 2301006

REP. 6/2/82 JB

Section I

MANUFACTURER'S NAME Rust-Oleum Corporation

STREET ADDRESS 11 Hawthorn Parkway

CITY, STATE, AND ZIP CODE Vernon Hills, Illinois 60061

EMERGENCY TELEPHONE NO (312) 367-7700

INFORMATION TELEPHONE NO (312) 367-7700

PRODUCT CLASS Aerosol

MANUFACTURER'S CODE IDENTIFICATION 2123, 2124, 2125, 2133, 2134, 2137, 2143, 2147, 2148, 2155, 2156, 2163, 2164, 2171, 2175, 2178, 2179, 2183, 2187, 2190, 2192

TRADE NAME HARD HAT® Topcoats

9 11 13 14 17 20 21 22

Section II — HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV PPM	TLV mg/M³	LEL	VAPOR PRESSURE
					mmHg@20°C
Xylol C-11	15-20%	100skin		1.0%	9.5
Methylene Chloride C-49	15-20%	200		None	340.0
Toluene C-62	5-10%	100skin		1.2%	38.0
Ethylene Glycol Monobutyl Ether C-54	5%*	50skin		1.1%	0.9
& P Naphtha C-68	5%*	500		1.1%	15.0
thyl Ethyl Ketone C-51	Less than 5%	200		1.8%	70.6
Propellant (aliphatic hydrocarbons) C-91	25%*	1000		1.9%	70 PSIG

*Nearest 5%

Section III — PHYSICAL DATA

BOILING RANGE Below 0°F (propellant)

VAPOR DENSITY [X] HEAVIER [ ] LIGHTER THAN AIR

EVAPORATION RATE [*] FASTER [ ] SLOWER THAN ETHER

PERCENT VOLATILE BY VOLUME N.A.

WEIGHT PER GALLON N.A.

*Propellant

Section IV — FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION Extremely Flammable (Propellant)

FLASH POINT Less than 0°F

LEL See II

EXTINGUISHING MEDIA

Use National Fire Protection Association (NFPA) Class B extinguishers (carbon dioxide, dry chemical or foam) designed to extinguish NFPA Class 1B liquid fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Do not spray near sparks or open flame. Do not smoke while spraying. Exposure to heat or prolonged exposure to sun may cause bursting. Do not puncture or incinerate (burn).

SPECIAL FIRE FIGHTING PROCEDURES

Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

Section V — HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: See Section II

EFFECTS OF OVEREXPOSURE

ACUTE: Inhalation: Anesthetic. Irritation of the respiratory tract or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion, unconsciousness or coma.

CHRONIC: Skin or Eye Contact: Primary irritation.

EMERGENCY AND FIRST AID PROCEDURES

Fumes: Remove from exposure. Restore breathing. Keep warm and quiet. Notify a physician. Spray (eyes): Flush immediately with copious quantities of running water for at least 15 minutes. Take to a physician for definitive medical treatment.

Section VI — REACTIVITY DATA

STABILITY: ☐ UNSTABLE ☒ STABLE — CONDITIONS TO AVOID: NA

INCOMPATABILITY (Materials to avoid): NA

HAZARDOUS DECOMPOSITION PRODUCTS: By open flame – carbon monoxide, carbon dioxide.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: Do not store above 120°F

Section VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition (flames, hot surfaces, and electrical, static, or frictional sparks.) Avoid breathing vapors. Ventilate area. Remove with inert absorbent and non-sparking tools.

WASTE DISPOSAL METHOD: Dispose of in accordance with local, state, and federal regulations. Do not incinerate (burn)

Section VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION

In outdoor or open areas use Bureau of Mines approved mechanical filter respirator to remove solid air borne particles of overspray during spray application. In restricted ventilation areas use Bureau of Mines approved chemical-mechanical filters designed to remove a combination of particulate, gas and vapor. In confined areas use Bureau of Mines approved air line type respirators or hoods.

VENTILATION

Provide general dilution or local exhaust ventilation in volume and pattern to keep TLV of most hazardous ingredient in SECTION II below acceptable limit, LEL in SECTION IV below stated limit.

PROTECTIVE GLOVES: Recommended in confined areas

EYE PROTECTION

OTHER PROTECTIVE EQUIPMENT

Section IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not puncture

DOL STORAGE CATEGORY: Class IA liquid

OTHER PRECAUTIONS: Do not puncture or incinerate. Do not spray near fire or open flame. Keep out of reach of children.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

Received 20 Aug 85 246
MMS60015 GOO 110

U.S. DEPARTMENT OF LABOR

WAGE AND LABOR STANDARDS ADMINISTRATION
Bureau of Labor Standards

MATERIAL SAFETY DATA SHEET (SPRAY)

9-1-84

SECTION I

MANUFACTURER'S NAME: WD-40 Company	EMERGENCY TELEPHONE NO.: 619/275-1400
ADDRESS (Number, Street, City, State, and ZIP Code): 1061 Cudahy Place (92110), P. O. Box 80607, San Diego, California 92138-9021	
CHEMICAL NAME AND SYNONYMS: Organic mixture	TRADE NAME AND SYNONYMS: WD-40 spray cans
CHEMICAL FAMILY	FORMULA

SECTION II HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS		%	TLV (Units)	ALLOYS AND METALLIC COATINGS		%	TLV (Units)
PIGMENTS	Not applicable			BASE METAL	Not applicable		
CATALYST				ALLOYS			
VEHICLE				METALLIC COATINGS			
SOLVENTS				FILLER METAL PLUS COATING OR CORE FLUX			
ADDITIVES				OTHERS			
OTHERS							

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
(1) Aliphatic petroleum distillate (stoddard solvent) CAS 8052-41-3 over	50	500ppm
(2) Petroleum base oil (CAS 8012-95-1) over	15	
(3) A-70 hydrocarbon propellant (liquified petroleum gas)(CAS 68476 85 7*	25	1000ppm
(4) Proprietary corrosion inhibitors and wetting agents *	Balance	

SECTION III PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H_2O=1) Total mix in can	.710
VAPOR PRESSURE (mm Hg.) in cans @ 70° F.	50 psig	PERCENT VOLATILE BY VOLUME (%) Total can contents	80
VAPOR DENSITY (AIR=1) greater than	1	EVAPORATION RATE (_____ =1)	
SOLUBILITY IN WATER insoluble - forms unstable emulsion.			
APPEARANCE AND ODOR light amber colored liquid slight characteristic odor.			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) Not applicable to spray cans	FLAMMABLE LIMITS propellant portion	Lel 1.8 vol	Uel 9.5 vol
EXTINGUISHING MEDIA CO_2, dry chemical, foam			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS Considered "extremely flammable" under Consumer Product Safety Commission regulations.			

*These do not constitute any special toxicity or handling hazards.

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE For thinner (lowest TLV of all components) 500 ppm.

EFFECTS OF OVEREXPOSURE Drying of skin, eye irritation, inhalation of vapor may cause anesthesia, headache, dizziness, nausea & upper respiratory irritation. Swallowing can cause irritation, nausea, vomiting, and diarrhea. Aspiration into lungs can cause chemical pneumonitis.

EMERGENCY AND FIRST AID PROCEDURES For ingestion, do not induce vomiting, call a physician. For eye contact, flush with plenty of water, remove contact lenses if worn. For skin contact, wash with soap and water, apply skin cream. For inhalation, remove to fresh air, give artificial respiration if necessary; if breathing is difficult, give oxygen.

SECTION VI REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Spills unlikely from cans. Leaking cans should be placed in plastic bag or open pail until pressure has dissipated.

WASTE DISPOSAL METHOD Empty spray cans should not be punctured or incinerated, bury in land fill. Liquid should be incinerated or buried in land fill.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

VENTILATION	LOCAL EXHAUST	SPECIAL
	Sufficient to keep solvent vapor less than TLV.	None
		OTHER: None

PROTECTIVE GLOVES None required

EYE PROTECTION None required

OTHER PROTECTIVE EQUIPMENT None required.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Keep from sources of ignition. Do not take internally. Avoid excessive inhalation of spray particles. Do not store above 120°F. Do not incinerate or puncture containers.

OTHER PRECAUTIONS

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

MATERIAL SAFETY DATA SHEET

8-17-82

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME: Osborn Manufacturing Company	EMERGENCY TELEPHONE NO.: 216-361-1900
ADDRESS (Number, Street, City, State and ZIP Code): 5401 Hamilton Avenue Cleveland, OH 44114	
CHEMICAL NAME AND SYNONYMS:	TRADE NAME AND SYNONYMS: Clear Acrylic 76229
CHEMICAL FAMILY: Pressurized Product	FORMULA: TM-693

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES & SOLVENTS		%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS				BASE METAL		
CATALYST				ALLOYS		
VEHICLE		6	---	METALLIC COATINGS		
SOLVENTS	Toluene, Xylene	38	100	FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES	Acetone	19	1000	OTHERS		
OTHERS	Methylene Chloride	14	200			

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES	%	TLV (Units)
Propane/Isobutane propellant	23	1000

SECTION III - PHYSICAL DATA

BOILING POINT (°F)	N.A.	SPECIFIC GRAVITY (H_2O=1)	N.A.
VAPOR PRESSURE (PSIG)	Less than 140@130°F	PERCENT VOLATILE BY VOLUME (%)	94
VAPOR DENSITY (AIR=1)	Heavier than air	EVAPORATION RATE (_____=1)	N.A.
SOLUBILITY IN WATER	Less than 1%		
APPEARANCE AND ODOR	Clear and solvent		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used): Below 20°F T.C.C.	FLAMMABLE LIMITS: N.A.	Lel	Uel

EXTINGUISHING MEDIA: Waterfog, Foam, CO_2 or Dry Chemical

SPECIAL FIRE FIGHTING PROCEDURES: Keep containers cool. Use equipment or shielding required to protect personnel against bursting or venting containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: At elevated temperatures (130° or over) containers may vent, rupture, or burst.

AUG 19 1982

BOB VILD

(Continued on reverse side)

Form OSHA 20
Rev. May 72

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Not applicable to multi-component products.

EFFECTS OF OVEREXPOSURE: May cause dizziness or in extreme case, absence of oxygen could produce narcosis.

EMERGENCY AND FIRST AID PROCEDURES: If unconscious, remove person to fresh air and call a physician. If sprayed in eyes, flush immediately with large quantities of water.

SECTION VI - REACTIVITY DATA

			CONDITIONS TO AVOID
STABILITY	UNSTABLE		
	STABLE	X	Pressurized containers could rupture above 130°F.

INCOMPATABILITY (MATERIALS TO AVOID):

HAZARDOUS DECOMPOSITION PRODUCTS: (from burning) Carbon dioxide, carbon monoxide and water.

			CONDITIONS TO AVOID
HAZARDOUS POLYMERIZATION	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Flush with large quantities of water. Ventilate area.

WASTE DISPOSAL METHOD: Do not puncture or incinerate containers. Give to a disposal service equipped to safely handle and dispose of pressurized containers.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): Avoid breathing concentrated vapors or particles from all products not specifically designed to be inhaled.

VENTILATION	LOCAL EXHAUST	normal use - normal ventilation	SPECIAL
	MECHANICAL (GENERAL)		OTHER
PROTECTIVE GLOVES	N.A.	EYE PROTECTION	

OTHER PROTECTIVE EQUIPMENT:

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Read and follow cautions on product label.

Do not store in temperatures above 120°F.

OTHER PRECAUTIONS:

18

MATERIAL SAFETY DATA SHEET

3M
3M Center
St. Paul, Minnesota 55144
(612) 733-1110

DUNS NO.: 00-617-3082

15693-C PWO

[illegible]nical Family	Trade Name: 3M Brand Spray Adhesive 76
3M I. D. Number: 62-4438-4935-1	AC&S Division

1. INGREDIENTS

	CAS. #	%	TLV® (unit)
Methylene chloride	75-09-2	~ 47	100 ppm
Styrene/isoprene/styrene polymer, thermoplastic copolymer, hydrocarbon resin, antioxidant and UV absorber		~ 11	
Propane/isobutane blend		~ 40	
Isoparaffin hydrocarbon		~ 2	400 ppm

2. PHYSICAL DATA

Boiling Point	Compressed gas	Solubility in Water	Nil
Vapor Pressure	Compressed gas	Specific Gravity (H_2O=1)	0.81
Vapor Density (Air = 1)	2.93	Percent Volatile	~90
Evaporation Rate (ether =1)	1.8	pH	N.A.

Appearance and Odor: Lt. yellow thin liquid

3. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): -50° F. Propellant

Flammable Limits: LEL = -- UEL = --

Extinguishing Media: N.A.

Special Fire Fighting Procedures: Treat as pressurized container.

Unusual Fire and Explosion Hazards: When exposed to flame, hazardous decomposition products may be produced.

4. ENVIRONMENTAL INFORMATION

Spill Response

N.A. Aerosol container.

Recommended Disposal

Do not puncture or incinerate can in household incinerator. Incinerate properly in accordance with local regulations as the product contains halogens. Completely empty containers may be disposed of in a sanitary landfill in accordance with local regulations.

TRADE NAME: 3M Brand Spray

5. HEALTH HAZARD DATA

Eye Contact

Product was moderately irritating to the eyes of laboratory animals when sprayed directly in the eye.

[Skin C]ontact

Product was slightly irritating to the skin of laboratory animals.

Inhalation

Vapors may be irritating to the upper respiratory system.

Ingestion

Liquid collected has been found to be practically non-toxic orally.

Suggested First Aid

Eye contact: Immediately flush eyes with plenty of water for at least 10 minutes and call a physician.

Skin contact: Wash with soap and water.

Inhalation: Provide fresh air.

6. REACTIVITY DATA

STABILITY	☐ Unstable ☒ Stable	Conditions to Avoid
INCOMPATABILITY		Materials to Avoid
HAZARDOUS POLYMERIZATION	☐ May Occur ☒ May Not Occur	Conditions to Avoid

Hazardous Decomposition Products

Exposure to flame or extremely hot surfaces could produce HCl vapors or other hazardous chlorinated decomposition products.

7. SPECIAL PROTECTION INFORMATION

Eye Protection

Safety glasses

Skin Protection

Ventilation

Local exhaust preferred; mechanical for low usage.

Respiratory and Special Protection

As required.

Other Protection

8. PRECAUTIONARY INFORMATION

Keep away from heat, sparks and open flame. Use only in areas adequately ventilated with enough air movement to remove vapors and prevent vapor buildup. Avoid eye contact. Avoid prolonged breathing of vapors and prolonged or repeated skin contact. Keep out of reach of children. DO NOT STORE ABOVE 120°F.

9. DEPARTMENT OF TRANSPORTATION

DOT Proper Shipping Name: COMPRESSED GAS, NOS

DOT Hazard Class: FLAMMABLE GAS UN1954

Issue Date: Dec.,1981

Supersedes: Nov.,1980

The information on this Data Sheet represents our current data and best opinion as to the proper use in handling of this product under normal conditions. Any use of the product which is not in conformance with this Data Sheet or which involves using the product in combination with any other product or any process is the responsibility of the user.

MATERIAL SAFETY DATA SHEET

NPCA

OCT 21 1985

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U.S. Department of Labor "Essentially Similar" to Form OSHA-20)

DATE OF PREP. 6/4/76

MMC0230 1035

Section I

MANUFACTURER'S NAME AIRTECH INTERNATIONAL, INC.

STREET ADDRESS 2542 E. Del Amo Blvd. CITY, STATE, AND ZIP CODE Carson, CA 90749

EMERGENCY TELEPHONE NO. (213) 603-9683

PRODUCT CLASS Release Agent MANUFACTURERS CODE IDENTIFICATION

TRADE NAME Release All #30

Section II — HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV PPM	TLV mg/m³	LEL	VAPOR PRESSURE
Methylene Chloride	30	500			350 Min (70°F.)
1,1,1 - tri-chloroethane	60	500			

Section III — PHYSICAL DATA

BOILING RANGE 104° - 162°F.

VAPOR DENSITY [X] HEAVIER [ ] LIGHTER THAN AIR

EVAPORATION RATE [ ] FASTER [X] SLOWER THAN ETHER

PERCENT VOLATILE BY VOLUME 85

WEIGHT PER GALLON 11.1 lbs.

Section IV — FIRE AND EXPLOSION HAZARD DATA

DOT CATEGORY Non-flammable FLASH POINT NONE LEL

EXTINGUISHING MEDIA N.A.

UNUSUAL FIRE AND EXPLOSION HAZARDS N.A.

SPECIAL FIRE FIGHTING PROCEDURES N.A.

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

US v MSP Rec'd from MSP Vol. 18 Exh. 253 Dace U.S. MANIFESTS Cont.

Releasable PI Hearing

MSD007

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CAMIE-CAMPBELL INC.

Release Agents

9225 WATSON INDUSTRIAL PARK • ST. LOUIS, MISSOURI 63126 • 314.968.3222

MATERIAL SAFETY DATA SHEET

E9-4487 THIS FORM DUPLICATES U.S. DEPT. OF LABOR FORM NO. L58-003-4 OF MAY 1968.

SECTION I

MANUFACTURER'S NAME: CAMIE-CAMPBELL, INC.	EMERGENCY TELEPHONE NO.: (314) 968-3222
ADDRESS (Number, Street, City, State, and ZIP Code): 9225 Watson Industrial Park - St. Louis, Missouri 63126	
CHEMICAL NAME AND SYNONYMS: Fluorocarbon Dispersion	TRADE NAME AND SYNONYMS: CAMIE #2000 TFE Coat
CHEMICAL FAMILY: Acrylic Resin-Fluorocarbon Polymer	FORMULA: Not a single chemical

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
Pigments	1.5	N/A	Base Metal		
Catalyst			Alloys		
Vehicle	1.0	N/A	Metallic Coatings		
Solvents Perchloroethylene	82.5	100ppm	Filler Metal Plus Coating or Core Flux		
Additives			Others		
Others	15	350ppm			

HAZARDOUS MIXTURES OF OTHER SOLVENTS	%	TLV (Units)
Propane C.A.S. 74-98-6	15	350ppm
Perchloroethylene C.A.S. 127-18-4	82.5	100ppm

SECTION III - PHYSICAL DATA

Boiling Point (°F)	120	Specific Gravity (H_2O = 1)	1.61
Vapor Pressure (mm Hg.)	14.4	Percent Volatile by Volume (%)	97.5
Vapor Density (Air = 1)	5.83	Evaporation Rate (_____ = 1)	2.8
Solubility in Water	None		
Appearance and Odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

		LEL	UEL
Flash Point (Method used)	None	Flammable Limits	none	none

Extinguishing Media: Chemical Foam; CO_2

Special Fire Fighting Procedures: Use local procedure for chemical fires.

Unusual Fire and Explosion Hazards: None

7/85

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value Approximately 100 ppm

Effects of Overexposure Dizziness may occur from breathing vapors.

Emergency and First Aid Procedures Splash: In eyes-flush with copious quantities of water. On skin - wash with soap and water. Remove to fresh air or administer oxygen.

SECTION VI - REACTIVITY DATA

Stability	Unstable		Conditions to Avoid N/A
	Stable	X	

Incompatability (*Materials to avoid*) None

Hazardous Decomposition Products Phosgene gas at high temperatures

Hazardous Polymerization	May Occur		Conditions to Avoid N/A
	Will Not Occur	X	

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled

Wash away with water

Waste Disposal Method Do not incinerate aerosol. Bury it. Waste contents may be incinerated.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection (*Specify type*) Standard

Ventilation	Local Exhaust Preferred	Special	
	Mechanical (*General*)	Other	

Protective Gloves Preferred | Eye Protection Preferred

Other Protective Equipment None

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Use in centilated area. Avoid breathing vapor. Avoid contact with eyes and skin.

Other Precautions Contents under pressure. Do not puncture or incinerate. Do not store above 120°F.

7/85

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R13

MATERIAL SAFETY DATA SHEET

GREAT STUF
One Compone

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME: Insta-Foam Products, Inc.	EMERGENCY TELEPHONE NO.: 815-741-6800 (days) 815-467-4115 (eve.& h
ADDRESS (Number, Street, City, State, and ZIP Code): 1500 Cedarwood Drive, Joliet, Illinois 60435	
CHEMICAL NAME AND SYNONYMS: One Component Urethane	TRADE NAME AND SYNONYMS: GREAT STUFF
CHEMICAL FAMILY: Urethane Chemicals	FORMULA: Mixture

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Unit
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Unit
Polyether Polyol Approx	23	
Triethylphosphate "	4	
Flame Retardant "	15	
Polymeric Isocyanate "	32	.02
Dichlorodifluoromethane "	25	1000

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H_2O=1)	1.25
VAPOR PRESSURE (mm Hg.)	R-12 gas at R.T.	PERCENT, VOLATILE BY ~~VOLUME~~ (%) weight Approx.	25
VAPOR DENSITY (AIR=1)	>1	EVAPORATION RATE (______ =1)	
SOLUBILITY IN WATER	Insoluble		
APPEARANCE AND ODOR	Light brown liquid		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel

EXTINGUISHING MEDIA: CO_2 or dry chemicals

SPECIAL FIRE FIGHTING PROCEDURES: Contains $C\ Cl_2F_2$ and N_2 which can develop pressure in sealed container:

UNUSUAL FIRE AND EXPLOSION HAZARDS

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
0.02 PPM

EFFECTS OF OVEREXPOSURE
Breathlessness, chest discomfort and reduced pulmonary function.

EMERGENCY AND FIRST AID PROCEDURES
Inhalation: Treat symptomatically; vaso-dilators, oxygen
Skin Contact: Wash with soap and water, alcohol helpful
Eye Contact: Flush with water 15 minutes - call a physician

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		Water contamination, protect from freezing
	STABLE		

INCOMPATABILITY (Materials to avoid)
Water and strong caustics

HAZARDOUS DECOMPOSITION PRODUCTS
500°F, CO, Benzene, Toluene, Oxides of nitrogen, HCN, Acetaldehyde, Acetone

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR	X	Moisture contamination water vapo:
	WILL NOT OCCUR		May form CO_2 gas pressure. Do not incinera

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Cover with absorbent material (sawdust); place in open top container or plastic sheet and treat with aqueous ammonium hydroxide or alcohol.

WASTE DISPOSAL METHOD
Bury or land fill in accordance with local and EPA regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES	EYE PROTECTION
For operator comfort	Safety goggles or face shield

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Keep containers closed and between 40° and 120°F. Do not store next to steam pipes.

OTHER PRECAUTIONS
Read and understand instructions before using.

GPO 934-110

MAGNAFLUX

MAGNAFLUX CORPORATION MATERIAL SAFETY DATA SHEET

PRODUCT: SKC-NF/ZC-7B CLEANER/REMOVER

IDENTIFICATION

ADDRESS:	7300 West Lawrence Avenue, Chicago, Illinois 60656
TELEPHONE:	(312) 867-8000
PACKAGES:	1 gallon can, 5 gallon pail, 55 gallon drum, 12 oz aerosol
CHEMICAL FAMILY:	Chlorinated Alkane
HMIS RATING:	Health 2, flammability 0, Reactivity 1

2.
HAZARDOUS INGREDIENTS

1,1,1-Trichloroethane (Methyl chloroform), CAS #71-55-6, TLV: 350 ppm, Conc. 100% Bulk, 95% Aerosol
Carbon dioxide (aerosol only), CAS #124-38-9, TLV: 5000 ppm, Conc. 5%
Dioxane, CAS #123-91-1, TLV: 25 ppm, Conc. about 1%

Contains no other ingredient suspected of being hazardous according to information sources given in 29 CFR 1910.1200, OSHA Hazard Communication Rule.

3.
HEALTH HAZARD

THRESHOLD LIMIT VALUE: 350 ppm

ROUTES OF ENTRY, EFFECTS OF OVEREXPOSURE

Inhalation:	Dizziness, drowsiness, nausea. Unconsciousness at high exposure
Skin Contact:	Irritates by dissolving skin oils. Not absorbed through skin in significant amounts
Eye Contact:	Irritating due to strong solvent action
Ingestion:	Low single dose toxicity in test animals

CARCINOGENICITY: The first and third listed ingredients are currently under investigation as possible carcinogens.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED BY EXPOSURE TO PRODUCT: None

4.
FIRST AID

INHALATION:	Remove to fresh air. If not breathing, call emergency vehicle immediately. Give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen.
SKIN CONTACT:	Wash off in flowing water or shower. Remove contaminated clothes and wash before re-use. Use soothing lotion.
EYE CONTACT:	Lift upper eyelid, depress lower eyelid, and flush eye with a steady, gentle flow of water. Roll eyeball in all directions while flushing.
INGESTION:	Do not induce vomiting; if vomit is inhaled, it may cause asphyxiation. Contact physician immediately.

IMPORTANT: POISON CONTROL CENTER NUMBER
In all severe cases, contact physician immediately. Local telephone operators are able to furnish number of Regional Poison Control Center to assist physician.

5. FIRE HAZARD

PRIMARY HAZARD: Can be a major contributing factor to a fire in progress.

SPECIAL FIRE FIGHTING PROCEDURE: Keep containers cool with water spray.

FLASH POINT: None

FLAMMABLE LIMITS IN AIR: 10 - 15%, using intense ignition sources.

EXTINGUISHING MEDIA: None

UNUSUAL FIRE HAZARDS: Aerosol cans may burst at temperatures over 130°F. Vapors partially decompose to toxic gases when exposed to flame, arcs, or red hot surfaces

6. REACTIVITY HAZARDS

STABILITY: Partially decomposes in flame, arcs, near red hot surfaces.

INCOMPATIBILITY: Powdered zinc and aluminum

HAZARDOUS DECOMPOSITION PRODUCTS: Phosgene, hydrochloric acid. Phosgene CAS #75-44-5 is extreme toxic, TLV 0.1 ppm and cannot be reliably detected by odor. Hydrochoric acid CAS #7647-01-0 is almost as toxic, TLV 5 ppm, and is detectable and even irritating at this concentration.

7. SAFE HANDLING PROCEDURES

GENERAL: Do not breathe vapors. Exposures above the TLV can result in clumsiness and poor jud ment, with resulting danger to the victim and those around him. Much like ingesting much alcohol. If victim is unconscious, death is possible, due to either suffocatior (lack of oxygen), or cardiac arrest. For avoidance see next two sections.

Avoid frequent or prolonged exposure to skin as the solvent can irritate skin. Do not use around flame, arcs, red hot surfaces or lighted smoking materials, so as avoid exposure to phosgene and hydrochloric acid.

Do not heat aerosol cans above 130°F to eliminate the possibility of their bursting releasing unwanted vapors.

Store away from heat sources to minimize the danger from exposure to fires.

PERSONAL PROTECTIVE EQUIPMENT:

In poorly ventilated areas such as small rooms with no windows, or in sumps or other areas (SKC-NF vapors are dense and sink to low spots) the user should wear a respira with chemical cartridge

In confined, unventilated spaces, such as the inside of tanks or small compartments, inspector should wear a full mask with separate air supply

If hand exposure to SKC-NF is unavoidable, wear nitrile rubber gloves, to avoid skin contact.

Wear full goggles if the application of SKC-NF includes splashing or the possibility spraying into the eyes. Be sure the goggles are clean and not apt to degrade the inspection procedure.

CONTROLS: SKC-NF vapors cannot be allowed to collect. It is preferred to use SKC-NF either in spray booth or next to an exhaust vent. Remember that the vapors tend to settle to floor.

General ventilation must be sufficient to keep the concentration below 350 ppm. Alr all of the SKC-NF that is used will evaporate into the surrounding air. Base ventil tion rate on consumption.

MAGNAFLUX

8. **DISPOSAL**

SPILLS AND LEAKS: Less than 1 Quart - Wipe up, following guidelines above in "Safe Handling Procedu:

One quart or more - EVACUATE AREA. Ensure that clean up crew wears all personal safety wear as presented in "Safe Handling Procedure". The nose is NOT a reliabl· gauge of air contamination.

WASTE DISPOSAL: Dispose of as EPA hazardous waste #F002. May be sent to solvent reclaimer. Ensure that aerosol cans are empty and depress· ized before discarding, unless a waste treatment facility is approved to accept t! as is.

9. **PHYSICAL PROPERTIES**

BOILING POINT:	162°F	VAPOR PRESSURE:	230 mm at 100°F
PERCENT VOLATILE:	100%	VAPOR DENSITY:	4
DENSITY:	1.3	EVAPORATION RATE:	3 times faster than ethyl alcohol
WATER SOLUBILITY:	Negligible	APPEARANCE:	Clear, colorless, mobile liquid
pH:	Neutral		

WARNING PROPERTIES: Odor can be detected at 100 ppm, but is not strong enough to cause discomfort at 1000 ppm.

10. **DOT SHIPPING**

SHIPPING NAME:	For Bulk - Methyl Chloroform
	For Aerosol - Compressed Gas, N.O.S.
MARKING:	For Bulk - None
	For Aerosol - Nonflammable Gas
HAZARD CLASS:	For Bulk - ORM-A
	For Aerosol - Nonflammable Gas
IDENTIFICATION:	For Bulk - UN2831
	For Aerosol - UN1956

11. **CERTIFIED**

DATE: October 7, 1986
Supercedes MSDS dated April 25, 1986

SIGNED: [signature]
Bruce C. Graham, Chief Chemist
MAGNAFLUX Corporation

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME: MAGNAFLUX CORPORATION	EMERGENCY TELEPHONE NO.: (312) 867-8000
ADDRESS (Number, Street, City, State, and ZIP Code): 7300 West Lawrence Avenue, Chicago, Illinois 60656	
CHEMICAL NAME AND SYNONYMS:	TRADE NAME AND SYNONYMS: SKC-NF/ZC-7 Cleaner (Aerosol)
CHEMICAL FAMILY:	FORMULA:

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
1.1.1 Trichloroethane	97	350ppm
Carbon Dioxide	3	3000ppm

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	165°F IBP	SPECIFIC GRAVITY (H_2O=1)	1.3
VAPOR PRESSURE (mm Hg.)	230 mm at 100°F	PERCENT, VOLATILE BY VOLUME (%)	100%
VAPOR DENSITY (AIR=1)	4-5	EVAPORATION RATE (Ether =1)	5
SOLUBILITY IN WATER	Insoluble		
APPEARANCE AND ODOR	Clear, colorless liquid, sweet odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used): None	FLAMMABLE LIMITS: None	Lel	Uel

EXTINGUISHING MEDIA: None

SPECIAL FIRE FIGHTING PROCEDURES: Keep aerosol cans cool with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Aerosol cans may burst if heated above 130°F. Vapors can decompose to toxic gasses when exposed to flame, arcs, red hot surfaces.

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	350 ppm
EFFECTS OF OVEREXPOSURE	Dizziness, initially, loss of consciousness eventually.

EMERGENCY AND FIRST AID PROCEDURES

Remove to fresh air. If in eyes, rinse copiously with water.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE	X	CONDITIONS TO AVOID: Using near flame, arcs, red hot surfaces.
	STABLE		

INCOMPATABILITY (Materials to avoid): Alkali Metals

HAZARDOUS DECOMPOSITION PRODUCTS: Phosgene, hydrochloric acid, if vapors are exposed to flame, arcs, red hot surfaces.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Can be allowed to evaporate away if spilled in aerosol can quantities. Wipe up residue with rag. No smoking.

WASTE DISPOSAL METHOD

Empty cans are not classed as hazardous waste

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type): If used in confined area, mask with separate air supply

VENTILATION	LOCAL EXHAUST: Spray Booth Preferred		SPECIAL
	MECHANICAL (General)		OTHER

PROTECTIVE GLOVES: None	EYE PROTECTION: None

OTHER PROTECTIVE EQUIPMENT: None

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in dry place, away from heat sources.

OTHER PRECAUTIONS

SKC-NF/ZC-7 Cleaner exerts drying action on skin, leading to irritation. Wipe off promptly.

A77

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1247

MATERIAL SAFETY DATA SHEET

M102

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
CRC Chemicals, USA	215-674-4300
ADDRESS (Number, Street, City, State, and ZIP Code) 885 Louis Drive Warminster, Pa. 18974	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS CRC 2-26 (Aerosol)
CHEMICAL FAMILY Corrosion Inhibitor & Lubricant	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Volatile-1,1,1 Trichloroethane	29	350
High flash aliphatic hydrocarbon	42	200
Carbon Dioxide (propellent)	4	
Non-Volatile-Organic corrosion inhibitor in high flash paraffinic oil	25	

SECTION III - PHYSICAL DATA

BOILING POINT (°F.) Initial	*220 F	SPECIFIC GRAVITY (H2O=1)	*0.932
VAPOR PRESSURE (mm Hg.)	*6.2mm (aerosol 85psig)	PERCENT, VOLATILE BY VOLUME (%)	76%
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (=1)	
SOLUBILITY IN WATER	all solvents more than negligible		
APPEARANCE AND ODOR	Amber liquid - pleasant odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	*180 F. C.O.C.	FLAMMABLE LIMITS	Lel / Uel
EXTINGUISHING MEDIA	CO_2, Foam, Dry Chemical		
SPECIAL FIRE FIGHTING PROCEDURES	Usual procedures for solvents		
UNUSUAL FIRE AND EXPLOSION HAZARDS	Aerosol cans may explode at temperatures above 120 F.		

* Bulk Values

(Continued on reverse side)

SECTION V · HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
Varies from an initial high of 350ppm down to 200ppm as solvents evapo

EFFECTS OF OVEREXPOSURE
Eye irritation, Drying of skin, excessive inhalation causes dizziness and nausea.

EMERGENCY AND FIRST AID PROCEDURES
Eye Contact-Flush with large amounts of water; Skin Contact-wash with mild soap and water, apply a skin cream; Inhalation-remove to fresh air and apply artificial respiration if necessary. In any case, if symptoms persist get medical aid.

SECTION VI · REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID Heat, sparks & open flame.
	STABLE	X	

INCOMPATABILITY (Materials to avoid)
Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Thermal decompositions may yield toxic gases.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII · SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Normally not applicable to aerosol packages. If spill is large enough flush with water, keep flames, heat and sparks from area. Use respirato. protection if necessary. Small spills may be picked up with absorbant materi.

WASTE DISPOSAL METHOD
Do not incinerate or puncture aerosol cans. Bury or discard in conformance with Local, State or Federal regulations. If full or partially full, cans must be handled as "Hazardous Waste".

SECTION VIII · SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)
Use self contained breathing apparatus for concentrations above TLV.

VENTILATION	LOCAL EXHAUST To maintain vapor conc. below TLV	SPECIAL
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES
Not normally needed for aerosol use.

EYE PROTECTION

OTHER PROTECTIVE EQUIPMENT

SECTION IX · SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Do not store aerosol cans above 120 F. Protect cans from puncturing.

OTHER PRECAUTIONS
Do not spray into open flame. Use with adequate ventilation.

GPO 934-130

H243 41-1

DOW CORNING CORPORATION
MATERIAL SAFETY DATA SHEET

EMERGENCY PHONE NO: (517) 496-5900

SECTION I

[illegible]DUCT NAME OR NUMBER: MOLYKOTE(R) G-RAPID SPRAY

MANUFACTURERS NAME: DOW CORNING CORPORATION
ADDRESS: SOUTH SAGINAW ROAD, MIDLAND MI 48640

PROPER SHIPPING NAME(49 CFR 172.101): COMPRESSED GAS NOS
D.O.T. HAZARD NAME(49 CFR 172.101) NONE
D.O.T. ID NO(49 CFR 172.101) UN 1954
D.O.T. HAZARD CLASS (49 CFR 172.101): FLAMMABLE GAS LTD. QTY
RCRA HAZARD CLASS*(40 CFR 261): IGNITABLE (D001)
E.P.A. PRIORITY POLLUTANTS (40 CFR 122.53): 1,1,1-TRICHLOROETHANE, METHYLENE CL[illegible]
HEALTH (NFPA): 3 FLAMABILITY (NFPA): 0 REACTIVITY (NFPA): 0
CAS. NO.: MIXTURE DCWC: 11, 32, 44
GENERIC DESCRIPTION: AEROSOL
* IF DISCARDED

SECTION II HAZARDOUS INGREDIENTS

1,1,1-trichloroethane	% 22	TLV (units): 350 ppm
methylene chloride	% 25	TLV (units): 350 ppm

SECTION III HEALTH HAZARD DATA HEALTH (NFPA): 3

[illegible]CTS OF OVEREXPOSURE: May irritate eyes. May cause slight anesthesia, [illegible]ches, etc.

THRESHOLD LIMIT VALUE OF PRODUCT: See above

EMERGENCY AND FIRST AID PROCEDURES: Inhalation - remove to fresh air. Obtain medical attention. Skin and eyes - flush with water.

SECTION IV FIRE AND EXPLOSION HAZARD DATA FLAMMABILITY (NFPA): 0

FLASH POINT (Method Used): Positive drum test
FLAMMABLE LIMITS IN AIR, % BY VOLUME: Lower: ---
Upper: ---
EXTINGUISHING MEDIA: ---
SPECIAL FIRE FIGHTING PROCEDURES: ---
UNUSUAL FIRE AND EXPLOSION HAZARDS: ---

(R) [illegible]DICATES REGISTERED OR TRADEMARK NAME OF DOW CORNING CORPORATION

DOW CORNING CORPORATION
MATERIAL SAFETY DATA SHEET

NAME OR NUMBER: MOLYKOTE(R) G-RAPID SPRAY

SECTION V PHYSICAL DATA

BOILING POINT: *
SPECIFIC GRAVITY: *
MELTING POINT: *
VAPOR PRESSURE: *
VAPOR DENSITY (AIR=1): *
PERCENT VOLATILE BY VOLUME (%): *
EVAPORATION RATE (ETHER = 1): *
SOLUBILITY IN WATER (%): *
FLASH POINT (METHOD USED): POSITIVE DRUM TEST
ODOR, APPEARANCE, COLOR: *
* TYPICAL AEROSOL PROPERTIES

SECTION VI REACTIVITY DATA   REACTIVITY (NFPA) 0

STABILITY: STABLE
    CONDITIONS TO AVOID: NOT APPLICABLE
INCOMPATABILITY (MATERIALS TO AVOID): [illegible]
HAZARDOUS DECOMPOSITION PRODUCTS: CHLORINE PRODUCTS, METAL OXIDES, CARBON DIOXIDE AND TRACES OF INCOMPLETELY BURNED CARBON PRODUCTS.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR
    CONDITIONS TO AVOID: NOT APPLICABLE

SECTION VII SPILL, LEAK AND DISPOSAL PROCEDURES

[illegible] TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: USE ABSORBENT MATERIAL TO COLLECT AND CONTAIN FOR SALVAGE OR DISPOSAL.

WASTE DISPOSAL METHOD: DOW CORNING SUGGESTS THAT ALL LOCAL, STATE AND FEDERAL REGULATIONS CONCERNING HEALTH AND POLLUTION BE REVIEWED TO DETERMINE APPROVED [illegible] PROCEDURES. CONTACT DOW CORNING IF THERE ARE ANY DISPOSAL QUESTIONS.

D.O.T. (49 CFR 171) [illegible] E.P.A. (40 CFR [illegible]) REPORTING INFORMATION

HAZARDOUS SUBSTANCE: NONE   RQ: NOT APPLICABLE
CONCENTRATION OF HAZARDOUS SUBSTANCE: NOT APPLICABLE
REPORTABLE QUANTITY OF PRODUCT: NOT APPLICABLE

[illegible]

(R) INDICATES REGISTERED OR TRADEMARK NAME OF DOW CORNING CORPORATION

DOW CORNING CORPORATION
MATERIAL SAFETY DATA SHEET

OR NUMBER: MOLYKOTE(R) G-RAPID SPRAY

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): ORGANIC VAPOR TYPE.

VENTILATION
LOCAL EXHAUST: NONE SHOULD BE NEEDED.
SPECIAL: NONE KNOWN TO DOW CORNING.
MECHANICAL (GENERAL): RECOMMENDED.
OTHER: NONE KNOWN TO DOW CORNING.

PROTECTIVE GLOVES: NONE SHOULD BE NEEDED.

EYE PROTECTION: PROPER EYE PROTECTION SHOULD BE WORN IN ANY TYPE OF INDUSTRIAL OPERATION.

OTHER PROTECTIVE EQUIPMENT: AS REQUIRED BY YOUR COMPANY.

SECTION IX- SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store below 120°F/49°C. Use reasonable care. Normal handling for aerosol products.

OTHER PRECAUTIONS: None known to Dow Corning.

This product does not contain fluoro-chlorohydrocarbons as the propellant.

THIS DATA IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EITHER EXPRESS OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.

PREPARED BY: L. C. VANVOLKINBURG
DATE: JULY 30, 1982
LAST REVISED: DECEMBER 10, 1981
PREVIOUS REVISION DATE: SEPTEMBER 30, 1981

(R) INDICATES REGISTERED OR TRADEMARK NAME OF DOW CORNING CORPORATION

8902198
MCDS Document #

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

APR 25 1989

SALES (504) 362-3987
PLANT (504) 631-3161

MSP CODE: -0-
(Formerly 8802639, 8802640, 8802637)

SUBMITTED BY: SPECIAL PROJECTS DIVISION
GULF COAST ENVIRONMENTAL SERVICES, INC.

Generator Name USNASA/Martin Marietta
Facility Address 13800 Old Gentilly Road
City, State, Zip New Orleans, LA 70129
Technical Contact K.M. Zedler
Title Environmental Engineer
Telephone NO. (504) 257-3433 EXT:
Facility EPA ID # LA4800014587

Bill To: Gulf Coast Environmental
Company Contact: Lean Marks
Container Size: 55gal and 85gal with crushed container
EPA Waste No. U121
Generating Process Compacting contaminated containers
Common Name of Waste Crushed containers
Rate of Generation 25 (Quan) dr (Units) PER 1yr (Time Interval)
Volume in Storage 5 (Quan) dr. (Units) IN 55 and 85 gal drums (Container Size and Type)
Is Waste DOT Hazardous | | YES ⋈ NO
Proper DOT Shipping Name Hazardous Waste Solid, n.o.s.,
Hazard Class ORM-E ID No. NA9189
Transportation Equipment Truck
Placarding none

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

Steel	≥ 90.0	%
Non-hazardous trash, plastic, residue and debris	≤ 10.0	%
Trichlorofluoromethane	≤ 1.0	%
		%
		%
		%

METALS (EP Toxicity Test, mg/l)

Arsenic (As)	NONE	Silver (Ag)	NONE
Barium (Ba)	SUSPECTED	Copper (Cu)	SUSPECTED
Cadmium (Cd)		Nickel (Ni)	
Chromium (Cr)		Zinc (Zn)	
Lead (Pb)			
Mercury (Hg)			
Selenium (Se)			

INORGANICS (mg/l or ppm)

Total CN	NONE	Iodine	NONE
Free CN	SUSPECTED	Asbestos	SUSPECTED
Sulfide			
Chloride			
Bisulfite			
Sulfite			
Sulfate			
Phosphate			
Flourine			
Bromine			
Chlorine			

ORGANICS (mg/l or ppm)

Endrin	NONE	Organohalide	NONE
Methoxychlor	SUSPECTED	Mercaptans	SUSPECTED
Toxaphene			
2, 4-5			
2,4,5-T			
Phenol(ics)			
PCBs			
Dioxin			
TOC			

PHYSICAL DESCRIPTION

Physical State	| | Liquid	| | Semi-solid	⋈ Solid	
Phases/Layering	| | Uni-Layer	| | Bilayer	⋈ Multilayer	
Viscosity	⋈ High	| | Medium	| | Low	
Type of Solids	| | Organic	| | Inorganic	⋈ Mixed	

Total Solids (wt. %) 99+ Suspended Solids (wt. %) Not applicable
BTU/lb ≤10 % Ash Content 99+ % Water (by weight) ≤1.0
Flash Point (°F) >400 Type Open cup
Specific Gravity >1.2 (S.g. of steel = approx. 8.0)
Boiling Point, (°C) — Freezing Point, (°C) —
Vapor Pressure (mm Hg @ 24°C) —
pH (Avg) neutral (Range) — to —
Total Alkalinity/Acidity (%) —
Odor Pungent when detectable
Color Brown/golden/grey

HAZARDOUS PROPERTIES

| | NONE		
| | Water Reactive	| | Reactive	| | Explosive
| | Shock Sensitive	| | Pyrophoric	| | Polymriable
| | Radioactive	| | Pesticide Residuals	| | Ignitable
| | Corrotive	⋈ Toxic Vapor	| | Pathogen
| | Biological	| | Etiological	
| | Other		

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: See MSDS's

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 4-24-89 GENERATOR'S SIGNATURE: Karen M. Zedler

Newest

MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 03392 Page: 1

PRODUCT NAME: CPR (R) 488A-1 RIGID SYSTEM

Effective Date: 01/21/87 Date Printed: 01/22/87 MSDS:002553

1. INGREDIENTS:

POLYMER OF MDI

Polymethylene polyphenylisocyanate
Trichlorofluoromethane
Surfactant

Substances listed in the Ingredients S
as being present at a concentration of
the substance is on the list of potent
OSHA Hazard Communication Standard. h
shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200(I).

2. PHYSICAL DATA:

BOILING POINT: 525F, decomposes
VAP. PRESS: 0.00016 mmHg @ 131F (55C)
VAP. DENSITY: >1.0
SOL. IN WATER: Reacts
SP. GRAVITY: 1.2
APPEARANCE: Dark brown liquid
ODOR: Pungent odor.

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: 410F, 210C
METHOD USED: COC

FLAMMABLE LIMITS
LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam, halon 1211. If water is used, it should be in very large quantity. The reaction between water and hot isocyanate may be vigorous.

(Continued on Page 2)
(R) Indicates a trademark of The Dow Chemical Company

3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)

FIRE & EXPLOSION HAZARDS: Down-wind personnel must be evacuated. Do not reseal contaminated containers since pressure build-up may cause rupture.

FIRE-FIGHTING EQUIPMENT: People who are fighting isocyanate fires must be protected against nitrogen oxide fumes and isocyanate vapors by wearing positive pressure self-contained breathing apparatus and full protective clothing.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Stable under recommended storage conditions. Store indoors at 50-85F. Protect from atmospheric moisture.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Water, acid, base, alcohols, metal compounds, surface active materials. Avoid water as it reacts to form heat, CO2 and insoluble urea. The combined effect of the CO2 and heat can produce enough pressure to rupture a closed container.

HAZARDOUS DECOMPOSITION PRODUCTS: Isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides and traces of hydrogen cyanide.

HAZARDOUS POLYMERIZATION: May occur with incompatible reactants, especially strong bases (alkalies, amines, metal salts) or water.

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Evacuate and ventilate spill area, dike spill to prevent entry into water system, wear full protective equipment including respiratory equipment during clean up.

Major spill: Call Dow Chemical U.S.A. (409) 238-2112. If

(Continued on Page 3)

5. ENVIRONMENTAL AND DISPOSAL INFORMATION: (CONTINUED)

transportation spill involved call Chemtrec (800) 424-9300. If temporary control of isocyanate vapor is required a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed but not sealed containers for disposal.

Minor spill: Absorb the isocyanate with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well-ventilated area (outside) and treat with neutralizing solution consisting of a mixture of water and 3-8% concentrated ammonium hydroxide (or 5-10% sodium carbonate). Add about 10 parts of neutralizer per part of isocyanate with mixing. Allow to stand for 48 hours letting evolved CO_2 escape.

Clean-up: Decontaminate floor using water/ammonia solution with 1-2% added detergent letting stand over affected area for at least 10 minutes. Cover mops and brooms used for this with plastic and dispose properly (often by incineration).

DISPOSAL METHOD: Follow all federal, state and local regulations.

Liquids are usually incinerated in a proper facility. Solids are usually also incinerated or landfilled. Empty drums should be filled with water; let stand for at least 48 hours; drums should be drained, triple rinsed, and holed or crushed to prevent reuse. Dispose of drain and rinse fluid according to local, state, and federal regulations.

6. HEALTH HAZARD DATA:

EYE: May cause slight transient (temporary) eye irritation and very slight transient (temporary) corneal injury.

SKIN CONTACT: May cause allergic skin reaction in susceptible individuals. Prolonged or repeated exposure may cause skin irritation. Material may stick to skin causing irritation upon removal.

SKIN ABSORPTION: A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful

(Continued on Page 4)

(R) Indicates a trademark of The Dow Chemical Company

6. HEALTH HAZARD DATA: (CONTINUED)

amounts. The LD50 for skin absorption in rabbits is > 2,000 mg/kg.

INGESTION: Single dose oral toxicity is low. The oral LD50 for rats is > 4,000 mg/kg.

INHALATION: May cause respiratory sensitization in susceptible individuals. At room temperature, vapors are minimal due to low vapor pressure. If heated or sprayed as an aerosol, excessive concentrations are attainable that could be hazardous on single exposure. Excessive exposure may cause irritation of the eyes, upper respiratory tract, and lungs. Effects may be delayed. Decreased ventilatory capacity has been associated with exposure to similar isocyanates; it is possible that exposure to MDI may cause similar impairment of lung function.

SYSTEMIC & OTHER EFFECTS: Based on available data, repeated exposures are not anticipated to cause any additional significant adverse effects. The major active ingredient in this material has been shown to be negative in some in vitro ("test tube") mutagenicity tests and positive in others.

7. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel. Due to high viscosity, this material may be difficult to remove from the eyes.

SKIN: Wash off in flowing water or shower.

INGESTION: Induce vomiting if large amounts are ingested. Consult medical personnel.

INHALATION: Remove to fresh air. If not breathing, give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. Call a physician.

NOTE TO PHYSICIAN: Supportive care. Treatment based on judgment

(Continued on Page 5)

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7. FIRST AID: (CONTINUED)

of the physician in response to reactions of the patient. No specific antidote. The manifestations of respiratory symptoms, including pulmonary edema, resulting from acute exposure may be delayed. May cause respiratory sensitization.

8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE(S): ACGIH TLV and OSHA PEL are 0.02 ppm ceiling for methylene bisphenyl isocyanate (MDI). ACGIH TLV is 1000 ppm ceiling for trichlorofluoromethane (Freon 11). OSHA PEL is 1000 ppm for fluorotrichloromethane (Freon 11).

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved supplied-air respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive pressure self-contained breathing apparatus.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation.

EYE PROTECTION: Use chemical goggles.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store indoors at 50-85F in original, unopened containers. Protect from atmospheric moisture. Replace outage with inert dry gas - nitrogen. Cautiously vent pressure buildup prior to fully opening container.

(Continued on Page 6)

(R) Indicates a trademark of The Dow Chemical Company

9. ADDITIONAL INFORMATION: (CONTINUED)

MSDS STATUS: Revised 4, 6, 7, 8, and 9.

010

MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 03393

PRODUCT NAME: CPR (R) 488B-1 RIGID SYSTEM

Effective Date: 01/08/87 Date Printed: 01/22/87 MSDS:002552

1. INGREDIENTS:

Trichlorofluoromethane (Fluorocarbon(F)11) CAS# 000075-69-4	23-33%
Tertiary amine and organotin catalysts mixture	4-7%
n-Butanol	2-3%
Proprietary polyether polyol blend and surfactants	balance

Substances listed in the Ingredients Section are those identified as being present at a concentration of 1% or greater, or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication Standard. Where proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200(I).

2. PHYSICAL DATA:

BOILING POINT: 74.5F, 23.6C (F 11)
VAP. PRESS: 798 mmHg @ 25C (F 11)
VAP. DENSITY: >1
SOL. IN WATER: Nil
SP. GRAVITY: >1
APPEARANCE: Light brown liquid.
ODOR: Butanol odor.

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: >350F, 177C
METHOD USED: COC

FLAMMABLE LIMITS
LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Water fog, alcohol-resistant foam, CO2, and dry chemical.

(Continued on Page 2)

3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)

FIRE AND EXPLOSION HAZARDS: Contains volatile blowing agent (F 11). Excessive heat can cause dangerous pressure buildup in closed containers. Thermal decomposition of F 11 in air can generate toxic phosgene.

FIRE-FIGHTING EQUIPMENT: Wear positive pressure self-contained breathing apparatus.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Stable at recommended storage conditions. Store in original, unopened containers at 50-70F.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Strong oxidizers and isocyanates.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, traces of nitrogen oxides, phosgene, and hydrogen cyanide under fire conditions.

HAZARDOUS POLYMERIZATION: Will not occur.

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS: Spills should be contained to prevent contamination of waterways. Dike spill and cover with oil absorbant material and sweep up.

DISPOSAL METHOD: Incinerate or bury in an approved landfill in accordance with local, state, and federal regulations.

(Continued on Page 3)

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 03393

PRODUCT NAME: CPR (R) 488B-1 RIGID SYSTEM

Effective Date: 01/08/87 Date Printed: 01/22/87 MSDS:002552

6. HEALTH HAZARD DATA:

EYE: May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness.

SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation. May cause more severe response if confined to skin.

SKIN ABSORPTION: A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The dermal LD50 for rabbits is >2000 mg/kg.

INGESTION: Single dose oral toxicity is low. Oral LD50 for rats is >4000 mg/kg.

INHALATION: Excessive vapor concentrations are attainable and could be hazardous on single exposure. Component trichlorofluoromethane is volatile at room temperature. In man, exposure to concentrations >2500 ppm may cause central nervous system, anesthetic or narcotic effects. At levels >5000 ppm, it may increase sensitivity to epinephrine and increase irregular heartbeats. Excessive exposure may cause irritation to upper respiratory tract and lungs. Vapors may irritate eyes.

SYSTEMIC & OTHER EFFECTS: Component trichlorofluoromethane did not cause cancer in laboratory animals in long-term animal studies. In vitro studies on components trichlorofluoromethane and butanol were negative.

7. FIRST AID:

EYES: Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.

SKIN: Wash off in flowing water or shower.

INGESTION: Induce vomiting if large amounts are ingested. Consult medical personnel.

INHALATION: Remove to fresh air. If not breathing, give mouth-

(Continued on Page 4)

7. FIRST AID: (CONTINUED)

to-mouth resuscitation. If breathing is difficult, give oxygen. Call a physician.

NOTE TO PHYSICIAN: Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs unless absolutely necessary. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE(S): ACGIH TLV is 1000 ppm ceiling for trichlorofluoromethane. OSHA PEL is 1000 ppm for fluorotrichloromethane. ACGIH TLV is 50 ppm ceiling, skin for n-butyl alcohol. OSHA PEL is 100 ppm for butyl alcohol.

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying

respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive pressure self-contained breathing apparatus.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation.

EYE PROTECTION: Use chemical goggles. If vapor exposure causes eye irritation, use a full-face respirator.

(Continued on Page 5)

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

PRODUCT NAME: CPR (R) 488B-1 RIGID SYSTEM

Effective Date: 01/08/87 Date Printed: 01/22/87 MSDS:002552

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store in original, unopened containers at 50-70F. Replace outage with dry, inert atmosphere. Cautiously vent pressure buildup prior to fully opening container. Contains F 11 - protect from excessive heat.

MSDS STATUS: Revised 1, 2, 3, 4, 8, and 9.

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

(6)

MCDS Document # 8902197

APR 25 1989

SALES (504) 362-3987
PLANT (504) 631-3161

MSP CODE: (Formerly 8802639) 8802640, 8802637

SUBMITTED BY: SPECIAL PROJECTS DIVISION
GULF COAST ENVIRONMENTAL SERVICES, INC.

Generator Name: US NASA/Martin Marietta
Facility Address: 13800 Old Gentilly Rd.
City, State, Zip: New Orleans, LA 70129
Technical Contact: K.M. Zedler
Title: Environmental Engineer
Telephone NO.: (504) 257-3933 EXT: —
Facility EPA ID #: LA4800014587

Bill To: Gulf Coast Environmental
Company Contact: Leon Marks
Container Size: 55gal and 85gal with crushed containers
EPA Waste No.: Non-RCRA Regulated
Generating Process: Compacting contaminated containers
Common Name of Waste: Crushed containers
Rate of Generation: 10 (Quan) dr (Units) PER yr (Time Interval)
Volume in Storage: 3 (Quan) dr (Units) IN 55 and 85 gal drums (Container Size and Type)

Is Waste DOT Hazardous [X] YES [ ] NO
Proper DOT Shipping Name: Waste Corrosive Solid, n.o.s.
Hazard Class: Corrosive Material ID No. UN 1759
Transportation Equipment: Truck
Placarding: Corrosive

CHEMICAL COMPOSITION (No Trade Name)
(Totals must add up to 100%)

Component	%
Steel	≥90.0 %
Non-hazardous trash, plastic, and debris	≤10.0 %
Corrosive Materials (less than 1 lb/drum) (HCl, H_2SO_4, Formic Acid, Chromic Acid, Sodium metasilicate, Hydrofluoric Acid, Soda Ash, nitric acid)	< 1.0 %

PHYSICAL DESCRIPTION

Physical State: [ ] Liquid [ ] Semi-solid [X] Solid
Phases/Layering: [ ] Uni-Layer [ ] Bilayer [X] Multilayer
Viscosity: [X] High [ ] Medium [ ] Low
Type of Solids: [ ] Organic [ ] Inorganic [X] Mixed
Total Solids (wt. %): 99+ Suspended Solids (wt. %): Not applicable
BTU/lb: <10 % Ash Content: 99+ % Water (by weight): <1.0
Flash Point (°F): none Type: —
Specific Gravity: 6.0-2.0 (S.g. of steel = approx 8.0)
Boiling Point, (°C): — Freezing Point, (°C): —
Vapor Pressure, (mm Hg @ 24°C): —
pH (Avg): Solid neutral (Range): — to —
Total Alkalinity/Acidity (%): —
Odor: mild
Color: various

METALS (EP Toxicity Test, mg/l)

Arsenic (As)	NONE SUSPECTED	Silver (Ag)	NONE SUSPECTED
Barium (Ba)	↓	Copper (Cu)	↓
Cadmium (Cd)	↓	Nickel (Ni)	↓
Chromium (Cr)	↓	Zinc (Zn)	↓
Lead (Pb)	↓		
Mercury (Hg)	↓		
Selenium (Se)	↓		

INORGANICS (mg/l or ppm)

Total CN	None Suspected	Iodine	None Suspected
Free CN	↓	Asbestos	↓
Sulfide	↓		
Chloride	~100		
Bisulfite	None Suspected		
Sulfite	↓		
Sulfate	~100		
Phosphate	None Suspected		
Flourine	↓		
Bromine	↓		
Chlorine	↓		

ORGANICS (mg/l or ppm)

Endrin	None Suspected	Organohalide	None Suspected
Methoxychlor	↓	Mercaptans	↓
Toxaphene	↓		
2, 4-D	↓		
2,4,5-T	↓		
Phenol(ics)	↓		
PCBs	↓		
Dioxin	↓		
TOC	↓		

HAZARDOUS PROPERTIES

[X] NONE

[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymriable
[ ] Radioactive [ ] Pesticide Residuals [ ] Ignitable
[ ] Corrotive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: See MSDS'S

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 4-24-89 GENERATOR'S SIGNATURE: Karen M. Zedler

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

US v MSP Rec'd from MSP Vol. 18 Exh. 253 Marc U.S. MANIFESTS Cont.

Releasable PI Hearing

MSD007

0488

JAN 10 1986 MSDS 20B 33k811

Material Safety Data Sheet

PPG INDUSTRIES, Inc.
Chemicals Group
One Gateway Center
Pittsburgh, PA 15222

Chemicals PPG INDUSTRIES

Approved by U.S. Dept. of Labor as "Essentially similar" to Form OSHA-20

Date: March, 1980	Edition: Third
Chemical Name and Synonyms: Sodium Hydroxide CAS No.: 1310-73-2	Trade Name and Synonyms: Liquid Caustic Soda, 50%
Chemical Family: Alkali	Formula: NaOH
DOT Shipping Name: Caustic Soda Liquid, 50%	DOT Hazard Class: Corrosive Material

SECTION 1 · PHYSICAL DATA

Boiling Point @ 760 mm Hg: 142°C 288°F	Vapor Density (Air=1): Not Applicable	Specific Gravity (H_2O=1): 60°/60°F = 1.530	pH of Solutions: All solutions are strongly basic
Freezing/Melting Point: 5°-11°C 41°-51°F	Solubility (Weight % in Water): appreciable > 10% 347g/100g water@100°C	Bulk Density: 12.76 lbs./gal. @60°F	Volume % Volatile: 50
Vapor Pressure: < 1mmHg	Evaporation Rate (______=1): Not Applicable	Heat of Solution: Exothermic	Appearance and Odor: water white to slightly turbid liquid; no odor

SECTION 2 · HAZARDOUS INGREDIENTS

SECTION 2 · HAZARDOUS INGREDIENTS	%	Hazard Data
Sodium Hydroxide	50	Corrosive

SECTION 3 · FIRE AND EXPLOSION HAZARD DATA

Flash Point °F (Method Used): None	Flammable Limits in Air (% by Volume): Not Applicable LEL: UEL:	Extinguishing Media: Not Applicable

Special Fire Fighting Procedures:

Not Applicable

Unusual Fire and Explosion Hazards: Contact with some metals particularly magnesium, aluminum, and zinc (galvanized) can generate hydrogen rapidly, which is explosive.

SECTION 4 · HEALTH HAZARD DATA

Permissible Exposure Limits (TLV): 2mg/m^3 - OSHA, 29CFR 1910.1000, May 28, 1975

Toxicity Data See Section 5	Classification (Poison, Irritant, Etc.)
LC_{50} Inhalation	Inhalation: Irritant
LD_{50} Dermal	Skin/Eye: Corrosive
LD_{50} Ingestion	Ingestion: Corrosive
LC_{50} (Lethal Concentration)	Aquatic:

Human Exposure Information/Data:

See Section 5

24-HOUR EMERGENCY ASSISTANCE: (304) 843-1300

SECTION 5 · EFFECTS OF OVEREXPOSURE

This section covers effects of overexposure for inhalation, eye/skin contact, ingestion and other types of overexposure information in the order of the most hazardous and the most likely route of overexposure.

Acute

Eye Contact: Causes severe burns; small quantities can result in permanent damage and loss of vision.

Skin Contact: Corrosive action causes burns and frequently deep ulceration with ultimate scarring. Prolonged contact destroys tissue. Mist from solutions can cause irritant dermatitis.

Swallowing: Ingestion can cause very serious damage to the mouth, esophagus, stomach, and other tissues with which contact is made and may be fatal.

Inhalation: Inhalation of mists can cause damage to the upper respiratory tract and to the lung tissue depending on extent of exposure. Effects can range from mild irritation of mucous membranes to severe pneumonitis.

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

Eye or Skin Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during this flushing with water. Call a physician. Immediately flush skin with plenty of water while removing contaminated clothing and boots. Call a physician. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing until slick skin feeling is gone. Thoroughly clean contaminated clothing and boots before reuse or discard.

Ingestion: *If conscious,* drink a quart of water. DO NOT induce vomiting. Take immediately to a hospital or physician. *If unconscious* or in convulsions, take immediately to a hospital or physician. DO NOT induce vomiting or give anything by mouth to an unconscious person.

Notes to Physician (Including Antidotes):

SECTION 6 · REACTIVITY DATA

Stability:	Conditions to Avoid:
Stable	Materials listed below
Hazardous Polymerization:	**Conditions to Avoid:**
Will not occur	None

Incompatibility (Materials to Avoid): Organic materials and concentrated acids--may cause violent reactions; caustic soda reacts with magnesium, aluminum, zinc (galvanized) tin, chromium, brass and bronze generating hydrogen which is explosive. Also, caustic soda may react with various food sugars to generate carbon monoxide (see comments, page 4).

Hazardous Decomposition Products: Reaction with various food sugars may form carbon monoxide.

SECTION 7 · SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Spilled or Released: Dike area to contain spill. Only trained personnel with proper protective equipment should be permitted in area. Reclaim if possible. Or, dilute spill with large amounts of water then neutralize with dilute acid. Use vacuum truck to pick up neutralized material for disposal (see below). After all visible traces have been removed, flush area with large amounts of water.

Waste Disposal Method: Dispose of in approved hazardous waste facility. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. It is your duty to dispose of the chemical materials and/or their containers in accordance with the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act and all state or local laws/regulations regarding disposal.

SECTION 8 · SPECIAL PROTECTION INFORMATION

Respiratory Protection: NIOSH/MSHA-approved mechanical filter type for exposure to mists above permissible exposure limit. Respiratory protection program must be in accordance with 29CFR 1910.134.

Ventilation (Type): Local Exhaust - Sufficient to minimize employee exposure to mists below permissible exposure limit.

Eye Protection:	Gloves:
Close fitting chemical safety goggles with face shield	Rubber or PVC

Other Protective Equipment Rubber boots with safety toes, rubber aprons, PVC clothing, plastic hard hat; eye-wash fountain and safety shower in immediate area. Personnel protective clothing and use of equipment must be in accordance with 29CFR 1910.133.

SECTION 9 · SPECIAL PRECAUTIONS

Precautions to be Taken During Handling and Storing:

- When handling, wear safety goggles and face shield, rubber gloves, rubber boots, rubber apron, cotton or polyester long-sleeved shirt and plastic hard hat.
- Wear NIOSH/MSHA-approved respirator for protection where mists may be generated.
- Never touch eyes or face with hands or gloves that may be contaminated with caustic soda.
- Never enter a caustic soda storage tank or container (tank truck or tank car)--even if it appears to be empty.
- Avoid contact with organic materials and concentrated acids—may cause violent reaction; caustic soda reacts with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze, generating hydrogen which is explosive. Also, caustic soda may react with various sugars to generate carbon monoxide.
- When diluting, add 50% liquid caustic soda slowly to surface of cold water to avoid splashing.

Other Precautions:

- DO NOT GET IN EYES, ON SKIN, ON CLOTHING. Can cause severe injury or blindness.
- AVOID BREATHING MIST.
- DO NOT TAKE INTERNALLY.
- WASH THOROUGHLY AFTER HANDLING.
- FOR ADDITIONAL PRODUCT INFORMATION, CONTACT PPG INDUSTRIES, INC.

References:

1. Dangerous Properties of Industrial Materials, N. Irving Sax, Fourth Edition, 1975
2. Occupational Exposure to Sodium Hydroxide, NIOSH, 1975

Comments: Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Follow appropriate tank entry procedures (see ANSI Z177.1 - 1977).

Mgr., Product Safety

K-985

Material Safety Data Sheet

DiverseyWyandotte Corporation 35
WYANDOTTE, MICHIGAN 48192
CALL TOLL FREE: 1-800-521-6140
IN MICHIGAN: 1-800-482-8018

TRADE NAME	AEROWASH N.F.	CHEMICAL NAME	
SYNONYMS		CHEMICAL FAMILY	Alkaline Water Base Cleaner
FORMULA		MOLECULAR WEIGHT	

NAME	%	TLV UNITS	TOXICOLOGICAL DATA
Sodium metasilicate	<5	-	Irritant, skin, eyes, mucous membrane:
Ethylene glycol-n-butyl ether	<5	50ppm*	Skin absorbed, hemolytic agent
*OSHA			

Boiling Point - /60mm Hg		pH	12.3-12.7
Vapor Pressure, mm Hg @ 20° C.		freezing point	30°F.
Specific Gravity (H_2O = 1)	1.03-1.04		
Solubility in Water	complete		
Appearance and Odor	liquid, typical mild odor		

DOT Unregulated

FLASH POINT (TEST METHOD)	non-flammable	AUTOIGNITION TEMPERATURE			
FLAMMABILITY LIMITS IN AIR - % BY VOLUME		LOWER		UPPER	

EXTINGUISHING MEDIA	☐ WATER FOG ☐ FOAM (Type) ☐ CO_2 ☐ DRY CHEMICAL ☐ OTHER
SPECIAL FIRE FIGHTING PROCEDURES	Alkaline corrosive solution - if released, prevent cont with skin or eyes. Although this product is non-flammab good fire fighting practice dictates the use of self-
UNUSUAL FIRE AND EXPLOSION HAZARDS	contained breathing apparatus and turn-out gear.

313-281-0930

This number is available days, nights, weekends, and holidays.

THRESHOLD LIMIT VALUE Not established

EFFECTS OF OVEREXPOSURE

Causes eye irritation on contact. Skin irritation results on prolonged contact. Alkaline salts and ethylene glycol-n-butyl ether cause gastric upset and possible kidney damage if ingested.

FIRST AID PROCEDURES

EYES FLUSH WITH FLOWING WATER AT LEAST 15 MINUTES	If irritation persists, consult a physician. Wash affected skin areas thoroughly with water. If swallowed, do not induce vomiting. Give milk or large quantities of water to drink. Consult a physician.	NEVER GIVE FLUIDS OR INDUCE VOMITING IF PATIENT IS UNCONSCIOUS OR HAVING CONVULSIONS

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATIBILITY Strong Acids

HAZARDOUS DECOMPOSITION PRODUCTS Ethylene glycol-n-butyl ether

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	DOES NOT OCCUR	X	

STEPS TO BE TAKEN IN CASE OF SPILLS

Mop up or flush to drain. Rinse affected area with water. Avoid contact with skin or eyes.

WASTE DISPOSAL METHOD

May require neutralizing to a specified pH range before sewering.

CONSULT LOCAL AND STATE LAWS

RESPIRATORY PROTECTION

VENTILATION	LOCAL EXHAUST		SPECIAL
	MECHANICAL (General)	Adequate	OTHER

PROTECTIVE CLOTHING Rubber gloves EYE PROTECTION goggles, face shield

boots, coveralls, aprons, as necessary to prevent skin contact.

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING AEROWASH	DANGER - May burn skin and eyes. Harmful if swallowed. Contains sodium metasilicate. If swallowed do not induce vomiting. Give one or two glasses of milk or water. Never give anything by mouth to an unconscious person or one suffering convulsions. In case of contact with skin or eyes flush immediately with plenty of water for at least 15 minutes. If swallowed, or for eyes, contact a physician immediately. Do not use for washing by hand. Keep out of Reach of Children.
HANDLING AND STORAGE CONDITIONS	Do Not Freeze.

JAN 2 1986 339 K8

ALLIED — PRODUCT SAFETY DATA SHEET

SULFURIC ACID

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME)	☒ C A S NO ☐ ALLIED PRODUCT CODE #
SULFURIC ACID	7664-93-9

CHEMICAL NAME AND/OR SYNONYM
Sulfuric Acid Synonym: Battery Acid

FORMULA	MOLECULAR WEIGHT
77 to 99 wt. % H_2SO_4 in water	98.08

ADDRESS (No., STREET, CITY, STATE AND ZIP CODE)
ALLIED CORPORATION
CHEMICAL SECTOR
P.O. Box 1139R
Morristown, N.J. 07960

CONTACT	PHONE NUMBER	LAST ISSUE DATE	CURRENT ISSUE DATE
Director, Product Safety	(201) 455-4157	July, 1982	Sept., 1985

B. FIRST AID MEASURES

EMERGENCY PHONE NUMBER (201) 455-2000

Skin or Eyes: Immediately flush with plenty of water continuing for at least 15 minutes. Remove contaminated clothing while washing. Continue flushing with water if medical attention is not immediately available.

Ingestion: Do not induce vomiting. If conscious, give several glasses of milk (preferred) or water.

Inhalation: Remove to fresh air. Observe for possible delayed reaction. If breathing has stopped, give artificial respiration. If breathing with difficulty, give oxygen, provided a qualified operator is available.

GET IMMEDIATE MEDICAL ASSISTANCE for ingestion, inhalation, eye contact, irritation, or burns.

C. HAZARDS INFORMATION

HEALTH

INHALATION
Inhalation of fumes or acid mist can cause irritation or corrosive burns to the upper respiratory system, including nose, mouth, and throat. Lung irritation and pulmonary edema can also occur. LC_{50} (mist, animals): 20-60 mg/cu.m. —Ref. (a).

INGESTION
Can cause irritation and corrosive burns to mouth, throat, and stomach. Can be fatal if swallowed.
Applicable to dilute solutions: LD_{50} (rat): 2140 mg/kg —Reference (b).

SKIN
Can cause severe burns.

EYES
Liquid contact can cause irritation, corneal burns, and conjunctivitis. Blindness may result, or severe or permanent injury.
Mist contact may irritate or burn. Reference (b).

PERMISSIBLE CONCENTRATION AIR (SEE SECTION J)		BIOLOGICAL
TLV same (ACGIH)	1 mg/cu.m. (as H_2SO_4) (OSHA)	None.

UNUSUAL CHRONIC TOXICITY
(1) Erosion of teeth, (2) lesions of the skin, (3) tracheo-bronchitis, (4) mouth inflammation, (5) conjunctivitis, (6) gastritis. —Reference (a).

Magnolia CHEMICALS & SOLVENTS, INC.
Industrial Chemicals

1020 SAMS AVE. • P.O. BOX 10278 • NEW ORLEANS, LA 70181-0278

JULY 31,1987

MARTIN MARIETTA
NEW ORLEANS, LA
MAIL STOP 3733

ATTN: SAFETY DEPARTMENT

RE: SAFETY DATA INFORMATION

GENTLEMEN:

ATTACHED PLEASE FIND THE SAFETY DATA INFORMATION ON THE FOLLOWING PRODUCT(S).

HYDROFLOURIC ACID 70%

THIS INFORMATION IS OFFERED BY THE MANUFACTURER(S) SO THAT YOU HAVE THE NECESSARY INFORMATION TO HANDLE THE PRODUCTS YOU PURCHASE FROM US IN A SAFE MANNER. WE ASK YOU TO COMMUNICATE THIS INFORMATION TO ALL PERSONS WHO COME IN CONTACT WITH THE COVERED PRODUCTS.

IF YOU NEED ANY ADDITIONAL INFORMATION ON THESE OR ANY OF OUR OTHER PRODUCTS, PLEASE LET US KNOW AT ONCE.

WE ASK THAT YOU SIGN AND RETURN THE ACKNOWLEDGEMENT COPY ATTACHED.

YOURS TRULY,
MAGNOLIA CHEMICALS & SOLVENTS, INC.

QUALITY CONTROL JP

ACKNOWLEDGEMENT OF RECEIPT:

DATE_____

COMPANY_____

BY_____

(PERSON AUTHORIZED TO SIGN FOR COMPANY)

SECTION B. FIRST AID MEASURES

For Acid Burns to the Body (Not the Eyes)

1. Remove the victim from the contaminated area and immediately place him under a safety shower or wash him with a water hose, whichever is available.
2. Remove all contaminated clothing.
3. Keep washing with large amounts of water for a minimum of 15 to 20 minutes.
4. Have someone make arrangements for medical attention while you continue flushing the affected area with water.

5(a). If available, after thorough washing, the burned area should be immersed in a solution of 0.2% iced aqueous Hyamine 1622 or 0.13% iced aqueous Zephiran Chloride. If immersion is not practical, towels should be soaked with one of the above solutions and used as compresses for the burned area. Ideally compresses should be changed every 2 minutes. At our plants we generally keep 10 - 15 liters of solution made up available for use. Solutions are replaced annually if not previously used.*

5(b). An alternative treatment to 5(a) is for the physician to inject sterile 10% aqueous calcium gluconate solution subcutaneously beneath, around, and in the burned area. Initially use no more than 0.5 cc per square centimeter and do not distort appearance of skin. If pain is not completely relieved, additional treatment is indicated.

6. Seek medical attention as soon as possible for all burns regardless of how minor they may appear initially.

B. For Acid in the Eyes

1. Irrigate eyes for at least 15 minutes with copious quantities of water, keeping eyelids apart and away from eyeballs during irrigation.
2. Get competent medical attention immediately, preferably an eye specialist.
3. If a physician is not immediately available, apply one or two drops of 0.5% Pontocaine Hydrochloride solution followed by a second irrigation for 15 minutes. Use none of the solutions described for skin treatment. Use no oils or greases unless instructed to do so by a physician.

C. If HF is Swallowed

1. Drink large amounts of water to dilute. Do not induce vomiting.
2. Several glasses of milk or several ounces of milk of magnesia may be given for their soothing effect.
3. Take victim to a doctor.

D. First Aid for Inhalation

1. Move victim to fresh air. Keep him lying down, quiet and warm.
2. Get competent medical attention immediately.
3. If breathing has stopped, start artificial respiration at once.
4. Oxygen should be administered to a victim who is having difficulty breathing and by an authorized person only, until the victim is able to breathe easily by himself.
5. Do not give stimulants unless instructed to do so by a physician.
6. Do not permit victim to become active for at least 24 hours. Victim should be examined by a physician and held under observation for at least this 24-hour period.

* Hyamine 1622 is a trade name for Benzethonium Chloride, Merck Index monograph 1078, a quaternary ammonium compound sold by Rohm and Haas, Philadelphia. Zephiran Chloride is a trade name for Benzalkonium Chloride, Merck Index monograph 1059, also a quaternary ammonium compound, sold by Winthrop Laboratories, N.Y.C.

Pontocaine Hydrochloride is a trade name for Tetracaine Hydrochloride, Merck Index monograph 8904, sold by Winthrop Laboratories, N.Y.C.

C. HAZARDS (Cont.)

FIRE AND EXPLOSION

FLASH POINT °C	AUTO IGNITION TEMPERATURE °C	FLAMMABLE LIMITS IN AIR (% BY VOL.)	
Not Flammable ☐ OPEN CUP ☐ CLOSED CUP	NA – Not Applicable	LOWER NA	UPPER NA

UNUSUAL FIRE AND EXPLOSION HAZARDS

...ction with certain metals generates flammable and potentially explosive hydrogen gas. Considerable heat is evolved when contacted with many substances. Heat increases pressure and may explode container. Will react violently with water.

D. PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

Use water or suitable agent for fires adjacent to non-leaking tanks or containers of HF.

FIRE EXTINGUISHING AGENTS TO AVOID

Do not use solid water streams near ruptured tanks or spills of HF. Acid reacts violently with water and can splatter acid onto personnel.

SPECIAL FIRE FIGHTING PRECAUTIONS

Wear self-contained breathing apparatus approved by NIOSH and full protective clothing. Use water spray to keep containers cool.

VENTILATION

Sufficient to reduce vapor and acid mists below permissible TLV levels. Packaging and unloading areas and open processing equipment may require mechanical exhaust systems.

NORMAL HANDLING

Do not breathe vapor or mist. Use only with adequate ventilation. Avoid all contact with skin, eyes and clothing, even with dilute solution. Do not add water to acid. Instead, dilute by adding acid to water cautiously and with agitation.

STORAGE

Store in approved containers only. Store in a cool, well-ventilated area. Flammable hydrogen gas can be generated in metal storage containers. Diking of storage tanks is recommended. Keep containers tightly closed. See also Section K.

SPILL OR LEAK

Wear full protective equipment described in Section E. Contain spills and cautiously dilute with large excess of water. Neutralize carefully with alkali such as soda ash or lime. Provide good ventilation. Flush residue in accordance with applicable disposal regulations. Attempt to keep unneutralized product out of sewer. Any release to the environment of this product may be subject to Federal and/or state reporting requirements. Check with appropriate agencies.

SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

Personnel should have medical surveillance for fluoride. Employees should be thoroughly trained in safety procedures. (See references). To prevent ignition of hydrogen gas that may be present from contact with metals, smoking, flames and sparks should not be permitted in storage areas. Label signal word: DANGER! Label also reads: POISON.

E. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Where required, use a respirator approved by NIOSH for HF gas or mists, as applicable. Some exposures may require a NIOSH-approved, self-contained breathing apparatus or air-supplied respirator. See references (e), (g).

EYES AND FACE

As a minimum, wear hard hat, chemical safety goggles (plastic lenses), fullface plastic shield. Do not wear contact lenses. For increased protection, use air-supplied acid hood.

HANDS, ARMS, AND BODY

For routine product use, wear acid-resistant jacket, trousers, boots and gauntlet gloves. For increased protection, use air-supplied acid suit.

OTHER CLOTHING AND EQUIPMENT

Eyewash and quick-drench shower facilities, protected from freezing, should be available where HF is stored or handled.

C. HAZARDS (Cont.)

FIRE AND EXPLOSION

FLASH POINT °C	AUTO IGNITION TEMPERATURE °C	FLAMMABLE LIMITS IN AIR (% BY VOL.)
Not Flammable ☐ OPEN CUP ☐ CLOSED CUP	NA – Not Applicable	LOWER NA UPPER NA

[UN]USUAL FIRE AND EXPLOSION HAZARDS

[Rea]ction with certain metals generates flammable and potentially explosive hydrogen gas. Considerable heat is evolved when contacted with many substances. Heat increases pressure and may explode container. Will react violently with water.

D. PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

Use water or suitable agent for fires adjacent to non-leaking tanks or containers of HF.

FIRE EXTINGUISHING AGENTS TO AVOID

Do not use solid water streams near ruptured tanks or spills of HF. Acid reacts violently with water and can splatter acid onto personnel.

SPECIAL FIRE FIGHTING PRECAUTIONS

Wear self-contained breathing apparatus approved by NIOSH and full protective clothing. Use water spray to keep containers cool.

VENTILATION

Sufficient to reduce vapor and acid mists below permissible TLV levels. Packaging and unloading areas and open processing equipment may require mechanical exhaust systems.

NORMAL HANDLING

Do not breathe vapor or mist. Use only with adequate ventilation. Avoid all contact with skin, eyes and clothing, even with dilute solution. Do not add water to acid. Instead, dilute by adding acid to water cautiously and with agitation.

[STO]RAGE

[Sto]re in approved containers only. Store in a cool, well-ventilated area. Flammable hydrogen gas can be generated in metal [st]orage containers. Diking of storage tanks is recommended. Keep containers tightly closed. See also Section K.

SPILL OR LEAK

Wear full protective equipment described in Section E. Contain spills and cautiously dilute with large excess of water. Neutralize carefully with alkali such as soda ash or lime. Provide good ventilation. Flush residue in accordance with applicable disposal regulations. Attempt to keep unneutralized product out of sewer. Any release to the environment of this product may be subject to Federal and/or state reporting requirements. Check with appropriate agencies.

SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

Personnel should have medical surveillance for fluoride. Employees should be thoroughly trained in safety procedures. (See references). To prevent ignition of hydrogen gas that may be present from contact with metals, smoking, flames and sparks should not be permitted in storage areas. Label signal word: DANGER! Label also reads: POISON.

E. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Where required, use a respirator approved by NIOSH for HF gas or mists, as applicable. Some exposures may require a NIOSH-approved, self-contained breathing apparatus or air-supplied respirator. See references (e), (g).

EYES AND FACE

As a minimum, wear hard hat, chemical safety goggles (plastic lenses), fullface plastic shield. Do not wear contact lenses. For increased protection, use air-supplied acid hood.

HANDS, ARMS, AND BODY

[Fo]r routine product use, wear acid-resistant jacket, trousers, boots and gauntlet gloves. For increased protection, use air-supplied [ac]id suit.

OTHER CLOTHING AND EQUIPMENT

Eyewash and quick-drench shower facilities, protected from freezing, should be available where HF is stored or handled.

D. HAZARDS (Cont.)

FIRE AND EXPLOSION

FLASH POINT °C	AUTO IGNITION TEMPERATURE °C	FLAMMABLE LIMITS IN AIR (% BY VOL.)
Not Flammable ☐ OPEN CUP ☐ CLOSED CUP	Not applicable	Not applicable

FIRE AND EXPLOSION HAZARDS

Flammable and potentially explosive hydrogen gas can be generated inside metal drums and storage tanks. Concentrated acid (as sold) can ignite combustible materials on contact.

E. PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

Use water spray or other suitable agent for fires adjacent to non-leaking tanks or other containers of sulfuric acid.

FIRE EXTINGUISHING AGENTS TO AVOID

Do not use solid water streams near ruptured tanks or spills of sulfuric acid. Acid reacts violently with water and can spatter acid onto personnel.

SPECIAL FIRE FIGHTING PRECAUTIONS

At high temperatures, sulfuric acid mist or sulfur trioxide gas can be released from vented or ruptured containers. If water is added to concentrated sulfuric acid, violent spattering can occur, and considerable heat may be evolved. Wear NIOSH-approved self-contained breathing apparatus with full facepiece and full protective clothing. Cool non-leaking fire-exposed containers with water spray.

VENTILATION

Sufficient to reduce vapor and acid mists to permissible levels. Packaging and unloading areas and open processing equipment may require mechanical exhaust systems. Corrosion-proof construction recommended.

NORMAL HANDLING

Keep sources of ignition away. Do not get in eyes, on skin, on clothing. Do not breathe vapor or mist. Use with adequate ventilation and use protective equipment as outlined in Section E. Procedures are detailed in references listed in Section J (Allied). Do not add water to acid. When diluting, always add acid to water, using caution and proper agitation.

STORAGE

Store in cool, well-ventilated area away from combustibles and reactive chemicals. Vent metal containers weekly or more frequently in hot weather to prevent hydrogen gas build-up. Diking of storage tanks is recommended.

SPILL OR LEAK (ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT – SECTION E)

Dilute small spills or leaks cautiously with plenty of water. Neutralize residue with alkali such as soda ash or lime. Adequate ventilation is required for soda ash due to release of carbon dioxide gas. No smoking in spill area. For major spills, keep unprotected persons away. Protected persons should contain the acid by diking the spill with soil or clay. Recover the acid if possible. (See Section I for disposal methods.) Attempt to keep out of sewer. Any release to the environment of these products may be subject to Federal and/or state reporting requirements. Check with appropriate agencies.

SPECIAL PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS — **SIGNAL WORD – DANGER!**

Vapor may contain explosive hydrogen. To prevent ignition of this if present, smoking, flames, and sparks should not be permitted in storage areas.

F. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Where required, use a respirator approved by NIOSH for sulfuric acid or mists, as applicable. Some exposures may require a self-contained breathing apparatus with full facepiece or supplied-air respirator with a full facepiece, helmet, or hood. –References (e, f, g).

EYES AND FACE

As a minimum, wear hard hat, chemical safety goggles, and full-face plastic shield. Do not wear contact lenses. For increased protection, use supplied-air acid hood.

HANDS ARMS AND BODY

As a minimum, wear acid-resistant apron, protective clothing, boots and gauntlet gloves for routine product use. For increased protection, include acid-resistant trousers and jacket.

OTHER CLOTHING AND EQUIPMENT

Eyewash and quick-drench shower facilities, protected from freezing, should be available wherever Sulfuric Acid is stored or handled.

PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS)	APPEARANCE AND ODOR	
☒ LIQUID ☐ SOLID ☐ GAS	Oily, colorless to slightly yellow, clear to turbid liquid. Odorless.	
BOILING POINT *a. 193 °C; b. 279; MELTING POINT c. 310 °C	SPECIFIC GRAVITY (H_2O = 1): *a. 1.706; b. 1.835; c. 1.842	VAPOR DENSITY (AIR = 1): Not applicable
SOLUBILITY IN WATER (% by Weight): Complete	pH: 1% solution: pH = 0.9	VAPOR PRESSURE (mm Hg at 20°C) ☐ (PSIG) ☐: negligible @ ambient
EVAPORATION RATE (Butyl Acetate = 1) ☐ (Ether = 1) ☐: Not applicable	% VOLATILES BY VOLUME (At 20°C): Not applicable	*a. 60°Be= 77.7% H_2SO_4 b. 66°Be=93% H_2SO_4 c. 99% H_2SO_4

G. REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
☐ UNSTABLE ☒ STABLE	Temperatures of 300°C or higher: yields sulfur trioxide gas, which is toxic, corrosive, and an oxidizer.

INCOMPATIBILITY (MATERIALS TO AVOID)

Nitro compounds, carbides, dienes, alcohols (when heated): cause explosions-Refs. (i, j, k). Oxidizing agents, such as chlorates and permanganates: cause fires and possibly explosions. Allyl compounds and aldehydes: undergo polymerization, possibly violent—Ref. (i), (continued, Section K).

HAZARDOUS DECOMPOSITION PRODUCTS

Sulfur trioxide gas: see above. Also this is a fire risk if in contact with organic materials.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR ☒ WILL NOT OCCUR	N.A.

H. HAZARDOUS INGREDIENTS (Mixtures Only)

MATERIAL OR COMPONENT/C.A.S. #	WT. %	HAZARD DATA (SEE SECT. J)
Not Applicable.		

[illegible]

DEGRADABILITY AQUATIC TOXICITY	OCTANOL/WATER PARTITION COEFFICIENT
Aquatic Toxicity 24.5 ppm/24 hr./bluegill/lethal/fresh water 42.5 ppm/48 hr./prawn/LC_{50}/salt water	N.D.

EPA HAZARDOUS SUBSTANCE? (CLEAN WATER ACT SECT. 311)	IF SO, REPORTABLE QUANTITY	40 CFR 116-117
☒ YES ☐ NO	1000 # (100% H_2SO_4 basis)	

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)

Waste sulfuric acid should be cautiously diluted with water and neutralized with an alkali. Neutralized waste must be disposed of in accordance with applicable disposal regulations. Waste may have to be disposed of by an approved contractor. (EPA corrosive waste–D002) applicable to the unneutralized acid).

RCRA STATUS OF UNUSED MATERIAL IF DISCARDED	HAZARDOUS WASTE NUMBER (IF APPLICABLE)	40 CFR 261.22
EPA Hazardous Waste.	No. D002 (corrosive)	

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

(1) OSHA standard at 29 CFR 1910.1000 (1981).
(2) TLV from the ACGIH 1984-85 list, "Threshold Limit Values for Chemical Substances . . .", Am. Conf. of Governmental Industrial Hygienists, Cincinnati 45202.

REGULATORY STANDARDS	D.O.T. CLASSIFICATION. Corrosive material	49 CFR 173
None additional.	DOT ID Number: UN 1830.	

GENERAL

(a) Documentation of the Threshold Limit Values, 4th Edition, 1981, Am. Conf. of Governmental Hygienists, Cincinnati 45202.
(b) NIOSH, Registry of Toxic Effects of Chemical Substances, 1982-83, Accession #WS 556 00 000, PB81-154478, Nat. Tech. Info. Service, Springfield, VA 22161.
(c) Allied Corporation wall chart.
(d) Allied Corporation product information bulletin.

K. ADDITIONAL INFORMATION

J. REFERENCES–General (continued)

(e) "Criteria for a Recommended Standard. . . Occupational Exposure to Sulfuric Acid", NIOSH U.S. Dept. of HHS, 1974, PB233098, Nat. Tech. Info. Service, Springfield, VA 22161.
(f) NIOSH/OSHA, "Pocket Guide to Chemical Hazards. . .", 1978.
(g) "NIOSH/OSHA–Occupational Health Guidelines for Chemical Hazards–Sulfuric Acid", 1978.
(h) Allied Chemical Technical Service Report for storage and handling procedures.
(i) NFPA Manual 491M, "Manual of Hazardous Chemical Reactions, 1975, Nat. Fire Protection Assoc., Boston 02210.
(j) Allied Corporation Product Safety Data Sheet for Sodium Sulfite, 1982.
(k) Bretherick, L., Handbook of Reactive Chemical Hazards, 2nd Ed., 1979, Butterworths, Boston.

G. REACTIVITY DATA–Incompatibility (continued)

Alkalis, amines, water, hydrated salts, carboxylic acid anhydrides, nitriles, olefinic organics, glycols, aqueous acids: cause strong exothermic reactions. –Refs. (i, k). Carbonates, cyanides, sulfides, sulfites, metals such as copper: yield toxic gases. –Refs. (j, k). Also for metals, see hydrogen generation, Section C.

Information (hazards, precautions, first aid, etc.) is abbreviated. More detailed information is contained in references found in Section J.

Allied Chemical
An Allied Company

PRODUCT SAFETY DATA SHEET

HYDROFLUORIC ACID, AQUEOUS

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME OR SYNONYM)	HEALTH / FLAMMABILITY / REACTIVITY / PERSONAL PROTECTION	CAS NO. / ALLIED PRODUCT CODE
Hydrofluoric Acid, Aqueous (Hydrofluoric Acid Solution, Aqueous HF, HF 70%, Hydrofluoric Acid, 70%)	H (Health) 3; F (Flammability) 0; R 0; Personal Protection K	7664-39-3
CHEMICAL NAME: [redacted]		
FORMULA: 70% HF in water by weight		MOLECULAR WEIGHT: 20.01 (HF)

ADDRESS (No., STREET, CITY, STATE AND ZIP CODE)

Allied Chemical
P.O. Box 1139R
Morristown, N.J. 07960

CONTACT	PHONE NUMBER	ISSUED DATE	REVISED DATE
Director — Product Safety	(201) 455-4157	June 12, 1980	April, 1982

B. FIRST AID MEASURES

EMERGENCY PHONE NUMBER (201) 455-2000

Exposure to hydrofluoric acid requires special treatment. See page 5.

C. HAZARDS INFORMATION

HEALTH

INHALATION Mild exposure: Can irritate nose, throat and respiratory system. Severe Exposure: Can cause nose and throat burns, lung inflammation and pulmonary edema. Also depletes calcium levels in the body if not promptly treated, resulting in death due to hypocalcemia. LC_{50}'s (animal) range from 456 to 1774 ppm/1H – Reference (a).

INGESTION Can cause severe mouth, throat and stomach burns. Can affect kidney function and be fatal if swallowed. Profound and possibly fatal hypocalcemia is likely to occur unless medical treatment is promptly initiated.

SKIN Both liquid and vapor can cause severe burns which may not be immediately painful or visible. HF will penetrate skin and attack underlying tissues and bone. Large burns (over 25 square inches) may also cause hypocalcemia which, in rare instances, has been fatal. Solutions as dilute as 2% or lower may cause burns – Reference (h).

EYES Both liquid and vapor can cause irritation or corneal burns or conjunctivitis.
Solutions as dilute as 2% or lower may cause burns – Reference (h).

PERMISSIBLE CONCENTRATION: AIR 3 ppm.* (SEE SECTION J)
Threshold Limit Value (TLV): 3ppm (equivalent to 2.5 mg/m^3) as F.

BIOLOGICAL THRESHOLD
mg(F)/liter of urine – Reference (c).
7 (post-shift) – 4 (pre-shift)

UNUSUAL CHRONIC TOXICITY
Bone and joint changes in humans (Fluorosis).
Embryotoxic in the rat at 0.47 - 4.98 mg/cu.m./4 hr. daily for the duration of gestation – Reference (d).

F. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS): ☒ LIQUID ☐ SOLID ☐ GAS ☐ ____	APPEARANCE AND ODOR Colorless liquid, fumes in air. Sharp pungent odor.	
BOILING POINT 66°C MELTING POINT -71°C	SPECIFIC GRAVITY (H_2O = 1) 1.258	VAPOR DENSITY (AIR = 1) 2.21 @ 70°F 1.97 @ 75°F 1.76 @ 80°F
SOLUBILITY IN WATER (% by Weight) complete	pH NA	VAPOR PRESSURE (mm Hg at 20° C) ☒ (PSIG) ☐ 110 mm Hg (approx.)
EVAPORATION RATE (Butyl Acetate = 1) ☒ (Ether = 1) ☐ (time to evaporate) Less than 1	% VOLATILES BY VOLUME (At 20° C) Unknown	

G. REACTIVITY DATA

STABILITY ☐ UNSTABLE ☒ STABLE	CONDITIONS TO AVOID

INCOMPATIBILITY (MATERIALS TO AVOID) (1) Glass, concrete, and other silicon-bearing materials: yield silicon tetrafluoride gas. Pressure build-up from this process has been known to blow up glass containers. Other hazards of this gas: see Reference (i). (2) Carbonates, sulfides, and cyanides: yield toxic gases: carbon dioxide, hydrogen sulfide, and hydrogen cyanide. (3) Alkalis, some oxides, fluorine and other water-reactive materials: cause strong exothermic reactions that can be violent. (4) Common metals: yield hydrogen gas, a fire and explosive hazard and a reactive hazard. (5) Corrosive to many materials, including leather, rubber and many organics.

HAZARDOUS DECOMPOSITION PRODUCTS

NA: boils away as hydrogen fluoride gas and water.

HAZARDOUS POLYMERIZATION ☐ MAY OCCUR ☒ WILL NOT OCCUR	CONDITIONS TO AVOID

H. HAZARDOUS INGREDIENTS (Mixtures Only)

MATERIAL OR COMPONENT/C.A.S. #	WT. %	HAZARD DATA (SEE SECT. J)
NOT APPLICABLE		

ENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY

Aquatic Toxicity:
60 ppm/*/fish/lethal/fresh water —Reference (j).

*Time period not specified.

OCTANOL/WATER PARTITION COEFFICIENT

HAZARDOUS SUBSTANCE? ☒ YES ☐ NO **IF SO, REPORTABLE QUANTITY:** 5,000 # 100% HF basis. **40 CFR 116-117**

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)

As waste disposal methods may vary, contact the supplier for specific recommendations. Treat small amounts by adding to an excess of water and neutralize with a lime slurry, limestone, soda ash or other alkali. Add to water and neutralize cautiously as reaction is immediate and can be violent. Considerable amounts of harmful vapors may be released. Good ventilation is required. Dispose of residue (or slurry) by removal to an approved chemical wastes landfill or by an approved disposal contractor.

RCRA STATUS OF UNUSED MATERIAL:
EPA Hazardous Waste No. U134 (hydrofluoric acid) if discarded. **40 CFR 261.33 (a) & (f)**

REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

(1) OSHA Standard: 29 CFR 1910.1000.
(2) TLV from the ACGIH 1981 list. "Threshold Limit Values for Chemical Substances . . . ".

REGULATORY STANDARDS

This product is not sold for food or drug use.

D.O.T. CLASSIFICATION: Corrosive Material **49 CFR**

DOT Identification Number: UN 1790

GENERAL

(a) NIOSH Registry of Toxic Effects of Chemical Substances, 1979, Sequence No. MW 7875000.
(b) Gosselin et al., Clinical Toxicology of Commercial Products, 4th Ed., 1976.
(c) NFPA Manual 49, "Hazardous Chemicals Data", 1975.
(d) Danilov, Chemical Abstracts 83: 054/132/b.
(e) NIOSH Criteria Document, Hydrogen Fluoride, Mar. 1976, Health and Human Services Department, Washington.
(f) Allied Corporation Wallchart on Hydrofluoric Acid.
(g) NIOSH/OSHA Manual, "Pocket Guide to Chemical Hazards", 1978.

ADDITIONAL INFORMATION

(h) Allied Chemical data, unpublished.
(i) Heyroth, F. F., "Halogens", Chapter XXII in Patty, editor, Industrial Hygiene and Toxicology, 2nd Ed., 1963, Vol. II, p. 844, John Wiley, NYC.
(j) Coast Guard CHRIS system, form HFX, "Hydrogen Fluoride, Oct., 1978.
(k) Allied Chemical Product Bulletin No. 505-044, "Hydrofluoric Acid".
(l) Allied Chemical Technical Service Report No. 33.78, "Recommendations for the Storage and Handling of 70% Hydrofluoric Acid".

Information (hazards, precautions, first aid, etc.) is abbreviated. More detailed information is contained in the references given in Section J.

D. PRECAUTIONS / PROCEDURES – Storage (continued):
Storage tanks in HF service are subject to indiscriminate hydrogen blistering and should, therefore, be routinely inspected and repaired if needed. Non-destructive tank thickness testing (NDT) should be utilized for periodic checks of tank wall thickness.

C. HAZARDS INFORMATION – Health
Permissible Concentration (continued)
NIOSH (1976) proposed a Biological Limit of 7 mg(F)/L in urine, supplemented by other medical data – Reference (e), Chapter 1.

PO BOX 10276 NEW ORLEANS, LA 70181-0276
TELEPHONE 504 733-4400

Philipp Brothers Chemicals, Inc.
COLISEUM TOWER BUILDING
10 Columbus Circle
New York, N.Y. 10019
Phibro
TELEPHONE: (212) 586-6020
TWX: 710-581-5202
TELEX: 235002
CABLES: PHIBROCHEM NEWYORK

SPECIFICATION SHEET

HYDROFLUORIC ACID 70%

PROPERTIES:

Colorless, fuming, mobil liquid; will attack glass and any silica-containing material.

TYPICAL SPECIFICATIONS:

ASSAY	70.0%
FLUOSILICIC ACID (H_2SiF_6)	1.56
SULFURIC ACID (H_2SO_4)	.06
CHLORINE	.005Max
IRON	.005Max
ARSENIC	.005Max
HEAVY METAL (Pb)	.005Max
IGNITION RESIDUE	.02%

PACKING:

220 KG. STEEL DRUMS

APPLICATION:

Polishing, etching and frosting of glass; pickling cooper, brass, stainless and other alloy steels; electropolishing of metals; cleaning stone, acidizing oil wells.

SHIPPING REGULATIONS:

ICC, CG, IATA, White Label

8/81

TURCO PRODUCTS
MATERIAL SAFETY DATA SHEET

4 = EXTREME	Fire: 2
3 = HIGH	Health: 3
2 = MODERATE	Reactivity: 1
1 = SLIGHT	Special: *
0 = INSIGNIFICANT	
* = CHRONIC HEALTH HAZARD — SEE SECTION V	

ISSUE DATE: 11/15/85

SECTION I — PRODUCT NAME: Turco Saue-Go #12

Manufacturer's Name: TURCO PRODUCTS
Address: 24600 So. Main Street, Carson, CA 90749
Emergency Telephone No.: (213) 634-3300

SECTION II — HAZARDOUS INFORMATION:

COMPONENTS	C.A.S. Number	CERCLA RQ SPILL #	RCRA Waste #	ACGIH TLV	OSHA TWA	%. WT.
Chromic Acid	1333820	1000	0007	50µg/m³Cr	C.1mg/m³CrO_3	8
Potassium hexafluorotitanate	16919270	Ntlstd	0002	2.5mg/m³ (F)	2.5mg(F)/m³	1

CARCINOGENS	NTP	IARC	OSHA
Chronic Acid (8 %)	listed	listed	not regulated

PROPER SHIPPING NAME	HAZARD CLASS	HAZARD I.D. No.
Compound, cleaning NOI…	Oxidizer	NA 1463

SECTION III — PHYSICAL DATA

BOILING POINT, °F.	Not applicable	SPECIFIC GRAVITY:	Not applicable
VAPOR PRESSURE (mmHg):	Not applicable	VOLATILE, % BY VOL:	Not applicable
VAPOR DENSITY (AIR = 1):	Not applicable	EVAPORATION RATE (Bu. Ac. = 1):	Not applicable
APPEARANCE AND ODOR:	Orange/white powder - little or no odor	SOLUBILITY IN WATER:	Complete
		pH	3% in H_2O 1-2

SECTION IV — FIRE AND EXPLOSION HAZARDS:

FLASH POINT AND METHOD USED:
None

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide. Avoid contact of dry chromic acid with water if possible. Dry chromic acid exposed to high heat may decompose to form a hot viscous foam which may cause a steam explosion with water.

SPECIAL FIRE FIGHTING PROCEDURE AND PRECAUTIONS: Use self-contained respiratory protection and full protective gear. Any water runoff may contain hexavalent chrome and should not be allowed to enter sewer or waterways.

UNUSUAL FIRE AND EXPLOSION HAZARDS: May increase intensity of fire when in contact with combustible materials. Cool fire exposed containers cautiously with water spray, being alert for possibility of steam explosion.

SECTION V — EMERGENCY, FIRST AID AND HEALTH INFORMATION:

EFFECTS OF OVER EXPOSURE: EYES: Contact with product, product dust or product solution will cause severe irritation, possible conjunctivitis, possible chemical burn, possible permanent tissue damage and possible blindness.

SKIN: Contact with product, product dust or product solution will cause severe irritation and possible chemical burns. Contact with breaks in skin can cause ulceration. Chromic acid is a skin sensitizer. May be absorbed through skin.

INHALATION: Inhalation of product dust or mist from product solution may cause ulceration and perforation of nasal septum, and irritation and damage to respiratory system. Symptoms of such irritation may resemble those of asthma. Overexposure to hexavalent chrome may cause lung cancer risk.

INGESTION: Can be harmful or fatal if swallowed. Toxic effects may not appear immediately.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Chromic acid is a systemic poison affecting the liver, kidneys and gastrointestinal tract, repeated overexposure may aggravate any preexisting dysfunction of these systems.

FIRST AID: EYES. Immediately begin flushing eyes with large amounts of water for at least 15 minutes. Hold lids apart to assure contact with all surfaces. Obtain medical attention.

SKIN. Wash with soap and flush with plenty of water without delay. If irritation is evident or blistering occurs, obtain medical attention.

INHALATION. Remove to fresh air. Administer oxygen if breathing is difficult. Obtain medical attention if irritation persists.

INGESTION: If conscious immediately dilute by giving large volume of water. Induce vomiting by giving syrup of ipecac or touching back of throat with finger. Repeat until vomit fluid is clear. Follow by more water or mucilaginous drinks. Obtain immediate medical attention. Never attempt to induce vomiting or give anything by mouth to an unconscious person.

PRIMARY ROUTES OF ENTRY: INHALATION X SKIN CONTACT X OTHER ____

SECTION VI — REACTIVITY DATA:

STABILITY: STABLE X UNSTABLE ____ HAZARDOUS POLYMERIZATION WILL NOT OCCUR

CONDITIONS TO AVOID: Contact with strong acids, strong alkali, reducing compounds, flammable or combustible materials.

HAZARDOUS DECOMPOSITION PRODUCTS:

None

SECTION VII — SPILL, LEAK AND DISPOSAL PROCEDURE:

SPILL OR RELEASE PROCEDURE: CONCENTRATE: Cleanup personnel should use appropriate protective equipment. Shovel dry spill into DOT-approved drums for disposal. Keep spill dry until as much as possible has been swept up and shoveled into disposal drums. Residual amounts should be dissolved in water and solution collected in DOT-approved drums for disposal. Do not allow product or rinse water from spill to enter sewer or waterways.

USE SOLUTION. Cleanup personnel should use appropriate protective equipment. Confine spill. Stop leak at source if this can be done safely. Ventilate area. Evacuate nonessential personnel. Pump liquid into DOT-approved drums for disposal. Absorb remaining material onto inert, inorganic absorbent and place in DOT-approved drums for disposal. Wash area with water. Collect washings and place in DOT-approved drums for disposal. Continue washing and collecting washing until all chrome is removed. Keep spill and all washings from entering sewer or waterways.

DISPOSAL INFORMATION: CONCENTRATE: (1) Transfer to reclaiming center for recycling or reuse, if possible. (2) Transfer to licensed hazardous waste treatment or disposal site for disposition under applicable local, state and regional regulations as hazardous waste.

SPENT SOLUTION AND RINSES: Dispose per (1) or (2) above, or spent solution and rinses can be treated to remove chromate and other oxidizing agents by reduction and precipitation and other objectionable ions removed by precipitation. Clarified water may be released to sewer if local regulations permit.

SECTION VIII — SPECIAL PROTECTION INFORMATION:

RESPIRATORY PROTECTION: For dust conditions, a NIOSH-approved respirator for toxic dust is advised. If respirators are used, a formal training and screening program must be initiated. See CFR 1910-134.

VENTILATION. Maintain sufficient mechanical ventilation to keep particulate concentration below TLV.

PROTECTIVE EQUIPMENT: CHEMICAL FACE SHIELD OR GOGGLES: X

GLOVES X BOOTS X APRON X PROTECTIVE SUIT Not normally required, but advised if necessary to avoid skin contact.

GLOVES, BOOTS, APRON AND SUIT MADE FROM: Neoprene

RECOMMENDED PERSONAL HYGIENE: Wash hands and face with soap and water before smoking or eating. Immediately remove all contaminated clothing. Launder before reuse. Do not launder at home. Discard contaminated shoes.

SECTION IX — OTHER INFORMATION:

SPECIAL PRECAUTIONS — STORAGE AND HANDLING: Store in dry protected area away from strong acids or bases, reducing compounds, flammable or combustible material.

MIXING: Slowly add to solution while mixing, taking care to avoid splashing or spattering. Use appropriate protective equipment.

REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT: Relieve any pressure. Cover openings to avoid splashing. Clean exterior and interior by flushing with water. Collect flushings for disposal. Use protective equipment for eyes, skin and inhalation.

DATE PREPARED. BB 11/15/85 DATE REVIEWED:

McGean-Rohco, Inc.

1250 Terminal Tower, Cleveland, Ohio 44113, 216/621-6425

MATERIAL SAFETY DATA SHEET

Product Name:	CEE BEE A-202	Emergency Phone No.:	213-803-4311
Plant Address:	9520 E. Cee Bee Drive Downey, CA 90241	Chemtrec Phone No.	800/424-9300
Prepared By:	TSCA Coordinator Issue Date: 4/83	Revised Date:	8/86

INGREDIENTS AND HAZARDOUS COMPONENTS

Material	%	TLV	C.A.S. #	Suspect Carcinogen
Methylene chloride	65-75	350	75-09-2	No
Phenol	10-15	19	108-95-2	No
Formic acid	10-15	9	64-18-6	No
		mg/M3		

PHYSICAL DATA

Boiling Point: 110°F	Freezing Point: UK	Specific Gravity: 1.2	pH: <2
Vapor Pressure at 20° C: UK	Vapor Density (Air = 1): UK	% Volatiles by Volume: 90	Odor: Pungent
Evaporation Rate (Butyl Acetate = 1) <1		Solubility in Water: Very slight	
Appearance and Form: Brown liquid			

FIRE AND EXPLOSION HAZARD DATA

Flash Point: NA	Flammable Limits in Air: % By Volume Upper: / Lower: NA
Test Method: NA	
Extinguishing Media: NA	
Special Fire Fighting Procedures: If involved in a fire, self-contained breathing equipment and full protective clothing should be worn.	
Unusual Fire and Explosion Hazards: None	
DOT Classification: Corrosive NA-1760	Note: UK = Unknown NA = Not Applicable

HEALTH HAZARD DATA

Effects of Overexposure and Primary Entries to Body:

Primary entries through contact and inhalation of vapors.
Very corrosive to skin and eyes.
Inhalation can cause headaches and dizziness.
Long term excessive inhalation could affect kidneys and liver.

Emergency and First Aid Procedures:

Flush skin and eyes with water for at least 15 minutes.
Get medical attention.
For inhalation, remove to fresh air.

REACTIVITY DATA

☒ Stable ☐ Unstable Conditions to Avoid:

Incompatability — Materials to Avoid: Alkalies

Hazardous Decomposition Products: None known

Hazardous Polymerization: ☐ May Occur ☒ Will Not Occur

SPILL OR LEAK PROCEDURES

Spills:

Neutralize and absorb on a suitable absorbent.

Disposal Methods:

Take to an approved waste disposal facility for removal of solvent and incineration.

Follow all Local, State and Federal regulations.

SPECIAL PROTECTION INFORMATION

Respirator: Organic catridge. NIOSH or MSHA approved.

Ventilation: Sufficient to keep below TLV limits.

Gloves	Eye and Face	Other
Solvent resist	Goggles and face shield	Sufficient to prevent skin contact.

Handling and Storage:

Store at 32-105°F in a well-ventilated area.
Keep tightly closed.

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

RECYCLE / REUSE

MANIFEST № 907223

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: VA2800005033
   Manifest Document No.: 0723
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: NASA Langley Research Center, MS 281 Bldg. 1149, Hampton, VA 23665
4. Generator's Phone: (804) 864-3207
5. Transporter 1 Company Name: Resource Recovery of America, Inc.
6. US EPA ID Number: FLD980602734
7. Transporter 2 Company Name:
8. US EPA ID Number:
9. Designated Facility Name and Site Address: MARINE SHALE PROCESSORS, INC., HIGHWAY 90 EAST, MORGAN CITY, LOUISIANA 70380
10. US EPA ID Number: LAD981057706

[redacted]

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	
a. Waste p,p'-Diaminodiphenylmethane Non-Hazardous	002	DM	01000	P	[redacted]
b.					[redacted]
c.					[redacted]
d.					[redacted]

[redacted]

15. Special Handling Instructions and Additional Information
a) RTS/NLRC8900956 (2 x 55g DM) Land Disposal Restriction form attached
(Jaffamine) * No Number Assigned by RCRA
IF UNABLE TO DELIVER, RETURN TO GENERATOR: 1140-5-89

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: V. William Wessel — Signature: V. William Wessel — Month Day Year: 03 15 89

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jimmy Howser — Signature: Jimmy Horner — Month Day Year: 03 15 89

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Gail Leonard — Signature: Gail Leonard — Month Day Year: 03 21 89

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

SALES (504) 465-3310

MCDS Document # 8900956 FEB 10 1989

MSP CODE: ____________

Generator Name NASA-Langley Res. Cent.
Facility Address Ms 281; Bldg. 1149

City, State, Zip Hampton, VA 23665
Technical Contact V. W. Wessel
Title Safety Manager
Telephone NO. (804) 865-2246 EXT: ______
Facility EPA ID # VA2800005033

Bill To: Resource Recovery Mid-South, Inc., 425 E. Pinner St., Suffolk, VA 23434
Company Contact: Jim Bolton
Contanier Size: 55 gal. - 17H
EPA Waste No. Non-Regulated
Generating Process Unused material which hardened
Common Name of Waste Jaffamine - epoxy hardener
Rate of Generation 2 (Quan) x 55 gals (Units) PER One time (Time Interval)
Volume in Storage 110 gals (Quan) (Units) IN 55gals/17H (Container Size and Type)
Is Waste DOT Hazardous [ ] YES [X] NO
Proper DOT Shipping Name Waste p,p'-Diaminodiphenylmethar
Hazard Class NonHaz ID No. Non-Regulated
Transportation Equipment Truck
Placarding None Required

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

para, para'- Diaminodiphenyl methane	59-60 %
Isopropanol	11-12 %
Metal containers	30-32 %
	%
	%
	%

PHYSICAL DESCRIPTION

Physical State [ ] Liquid [X] Semi-solid [ ] Solid
Phases/Layering [ ] Uni-Layer [ ] Bilayer [X] Multilayer
Viscosity [X] High [ ] Medium [ ] Low
Type of Solids [ ] Organic [ ] Inorganic [X] Mixed
Total Solids (wt. %) 60 Suspended Solids (wt. %) 60
BTU/lb 10,750 % Ash Content 40-50% Water (by weight) 1
Flash Point (°F) 430°F Type CC
Specific Gravity 1.4-1.5
Boiling Point, (°C) UNK Freezing Point, (°C) UNK
Vapor Pressure (mm Hg @ 24°C) UNK
pH (Avg) 11.7 (Range) 10 to 12
Total Alkalinity/Acidity (%) UNK
Odor aminelike
Color dark brown

METALS (EP Toxicity Test, mg/1)

Arsenic (As)	< 5	Silver (Ag)	< 5
Barium (Ba)	< 100	Copper (Cu)	< 1
Cadmium (Cd)	< 1	Nickel (Ni)	< 1
Chromium (cr)	< 5	Zinc (Zn)	< 1
Lead (Pb)	< 5		
Mercury (Hg)	< 0.2		
Selenium (Se)	< 1		

INORGANICS (mg/1 or ppm)

Total CN	0	Iodine	0
Free CN	0	Asbestos	0
Sulfide	0		
Chloride	0		
Bisulfite	0		
Sulfite	0		
Sulfate	0		
Phosphate	0		
Flourine	0		
Bromine	0		
Chlorine	0		

HAZARDOUS PROPERTIES

[X] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymriable
[ ] Radioactive [ ] Pesticide Residuals [ ] Ignitable
[ ] Corrotive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ____________

ORGANICS (mg/1 or ppm)

Endrin	0	Organohalide	0
Methoxychlor	0	Mercaptans	0
Toxaphene	0		
2, 4-5	0		
2,4,5-T	0		
Phenol(ics)	0		
PCBs	0		
Dioxin	0		
TOC	47%		

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: ____________

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 2/6/89 GENERATOR'S SIGNATURE: V W Wessel

MSP FORM 1040 (REV. JUN/87)

US v MSP Rec'd from MSP Vol 18 Exh. 253 Mace U.S. MANIFESTS Cont.

Releasable PI Hearing

MSD007

the bionetics corporation
ANALYTICAL LABORATORIES

20 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
NATIONAL 1-800-423-9918
VIRGINIA 1-800-468-5348

NASA JEFFAMINE

REPORT OF ANALYSIS

TO: RESOURCE RECOVERY MIDSOUTH INC
425 EAST PINNER
SUFFOLK, VA 23434

10/20/88

ATTN: JIM CLARK

SAMPLE OF: WASTE MATERIAL — RECEIVED DATE 09/19/88

SAMPLE ID: 09168801BH — BAL LOG NO(s). RC544

			LIMITS
Physical:	Corrosivity:	NEG	
	pH=		
	Reactivity:		
	Cyanide		
	Sulfide		
	Ignitability:	N/R	
	FLASH Pt., oF		60
EP TOXICITY			
Inorganic:	Arsenic, mg/l	< 0.01	5.0
	Barium, mg/l	< 0.03	100
	Cadmium, mg/l	<0.005	1.0
	Chromium, mg/l	< 0.05	5.0
	Lead, mg/l	< 0.05	5.0
	Mercury, mg/l	<0.004	0.2
	Selenium, mg/l	< 0.01	1.0
	Silver, mg/l	< 0.01	5.0
Organic:	Endrin, mg/l		0.02
	Lindane, mg/l		0.4
	Methoxychlor, mg/l		10
	Toxaphene, mg/l		0.5
	2,4-D, mg/l		10
	2,4,5-TP(Silvex), mg/l		1.0

The EP Toxicity analyses were performed on an extract prepared according to 40 CFR 261.

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS

RESPECTFULLY SUBMITTED,

[signature]

Water, Wastewater, Hazardous Waste, Industrial Hygiene and Chemical-Bacteriological Analysis

US v MSP
Rec'd from MSP — Releasable PI Hearing
Vol 13 Exh 253 Mace U.S. MANIFESTS
Cont.

MSD007

0998

the **bionetics** corporation
ANALYTICAL LABORATORIES

NASA JAFFAMINE

20 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
NATIONAL 1-800-423-9918
VIRGINIA 1-800-468-5548

REPORT OF ANALYSIS

TO: 10/20/88
RESOURCE RECOVERY MIDSOUTH INC.
425 EAST PINNER
SUFFOLK, VA 23434

ATTN: JIM CLARK

MATRIX: WASTE MATERIAL
SAMPLE DATE: RECEIVED DATE: 09/19/88

SAMPLE ID: 09168801BH BAL LOG NO(s). D4393

TEST	TEST RESULTS	
FLASH POINT	430.	oF
BTU	15360.	
8010 COMPOUNDS	< 5.	mg/kg
8020 COMPOUNDS	< 10.	mg/kg

RESPECTFULLY SUBMITTED,

SEE REVERSE SIDE FOR EXPLANATION
OF SYMBOLS AND ABBREVIATIONS

E.T. Shaw

Water, Wastewater, Hazardous Waste, Industrial Hygiene and Chemical-Bacteriological Analysis

RESOURCE RECOVERY MID SOUTH, INC.

Mailing Address: P. O. Box 3228, Suffolk, VA 23434

Telephone (804) 539-0005
1-800-727-2929

Tuesday, February 7, 1989

Marine Shale Processors, Inc.
110 James Drive West
Suite 120
St. Rose, LA 70087

Attention: Mr. Mike Jaubert

Dear Mr. Jaubert,

Enclosed you will find a Materials Characterization Data Sheet on a wastestream from the NASA-Langley Research Center. Also enclosed are copies of some lab results we obtained. We would appreciate your approving this material into Marine Shale Processors, Inc. as soon as possible. Thank you very much for your time and consideration in this matter.

Sincerely,

James J. Bolton
Technical Specialist

Enclosures

JJB

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

RECYCLE / REUSE

MANIFEST Nº 903787

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: AZD260010312 — Manifest Document No.: 04129
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
VETERANS ADMINISTRATION MEDICAL CENTER
3601 SOUTH SIXTH AVENUE
TUCSON, ARIZONA 85723

4. Generator's Phone (602) 792-1450

5. Transporter 1 Company Name: HAZCHEM ENVIRONMENTAL SERVICES
6. US EPA ID Number: AZD982483125

7. Transporter 2 Company Name: CHEMICAL DISPOSAL (CTI)
8. US EPA ID Number: AZT050010008

9. Designated Facility Name and Site Address:
MARINE SHALE PROCESSORS, INC.
HIGHWAY 90 EAST
MORGAN CITY, LOUISIANA 70380
10. US EPA ID Number: LAD981057706

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. WASTE CORROSIVE SOLID, N.O.S. CORROSIVE MATERIAL, UN-1759	002	DF	00035	G
b. N/A				
c. N/A				
d. N/A				

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PROTECTIVE CLOTHING, GLOVES, EYE WEAR, RESPIRATORY PROTECTION, ETC. LAND DISPOSAL RESTRICTION INFORMATION IS ATTACHED.
IF UNABLE TO DELIVER, RETURN TO GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Jeanne Nordstrom — Signature: Jeanne Nordstrom — Month Day Year: 04 12 89

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ROY D. TRUMAN — Signature: Roy D. Truman — Month Day Year: 04 12 89

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Michael J. Holberg — Signature: Michael J. Holberg — Month Day Year: 04 12 89

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Gail Leonard — Signature: Gail Leonard — Month Day Year: 04 18 89

EPA Form 8700-22 (Rev. 9-88) WHITE – DEQ, GREEN – Generator, YELLOW – TSDRF, BLUE – Transporter 2, PINK – Transporter 1, GOLD – Generator DEQ FORM HW-3 (R 9-88)

REVISED REFERENCE # 8900205

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

P.O. BOX 1698 • KENNER, LA. 70063
SALES (504) 465-3310

MCDS Document # JAN 31 1989

MSP CODE: _____

Generator Name: V.A. MEDICAL CENTER
Facility Address: 3601 S. SIXTH AVENUE
City, State, Zip: TUCSON, AZ 85723
Technical Contact: JEANNE NORDSTROM
Title: INDUSTRIAL HYGIENIST
Telephone NO.: 602 - 792-1450 EXT. 6070
Facility EPA ID #: AZD260010312

Bill To: HAZCHEM ENVIRONMENTAL SERVICES, INC.
Address: 3855 S. EVANS BLVD. # 405
City, State, Zip: TUCSON, ARIZONA 85714
Telephone #: 602 - 741 - 0100
Company Contact: JOHN GUNDLACH
Container Size: 1-30 gal FIBER DRUM, 1-5 gal POLY
EPA Waste No.: D002
Generating Process: SULFURIC ACID SPILL CLEANUP
Common Name of Waste: NONE
Rate of Generation: ONE TIME PER ONLY
Volume in Storage: 1 (Quantity) 30 gal (Container Size) IN ZIC FIBER (Container Size and Type)
1 (Quantity) 5 gal (Container Size) POLY DRUM
Is Waste DOT Hazardous: X YES | | NO
Proper DOT Shipping Name: CORROSIVE SOLID, NOS
Hazard Class: CORROSIVE MATERIAL ID No.: UN1759
Transportation Equipment: FLAT-BED TRUCK
Placarding: _____
30-gal = 160 lbs. 5-gal = 40 lbs.

CHEMICAL COMPOSITION (No Trade Name)

(Include most abundant to lowest)

SODIUM SULFATE	20 %
SODIUM OXIDE	5 %
SODIUM CARBONATE	5 %
SULFURIC ACID	10 %
WATER	10 %
INERT CLAY ABSORBENT	50 %
	%

METALS (EP Toxicity Test, mg/l)

Arsenic (As)	NS	Silver (Ag)	NS
Barium (Ba)		Copper (Cu)	
Cadmium (Cd)		Nickel (Ni)	
Chromium (Cr)		Zinc (Zn)	
Lead (Pb)			
Mercury (Hg)			
Selenium (Se)			

INORGANICS (mg/l or ppm)

Total CN	NS	Iodine	NS
Free CN		Asbestos	
Sulfide			
Chloride			
Bisulfite			
Sulfite			
Sulfate			
Phosphate			
Fluoride			
Bromide			
Chromate			

ORGANICS (mg/l or ppm)

Endrin	NONE	Organohalide	NONE
Methoxychlor		Mercaptan	NONE
Toxaphene			
2,4-D			
2,4,5-T			
Phenolics			
PCBs			
Dioxin			
TOX			

NS = NONE SUSPECTED

PHYSICAL DESCRIPTION

Physical State		Liquid	X Semi-solid	X Solid
Phases/Layering	X One-Layer		Bilayer		Multilayer
Viscosity	X High		Medium		Low
Type of Solids		Organic	X Inorganic		Mixed

Total Solids (wt. %): 100 Suspended Solids (wt. %): _____
BTU/lb: 2500 % Ash Content: 30 % Water (by weight): 10
Flash Point (°F): NONE Type: CLOSED CUP
Specific Gravity: 0.81
Boiling Point, (°C): NONE Freezing Point, (°C): NONE
Vapor Pressure (mm Hg @ 24°C): NONE
pH (Ave): 4.5 (Range): 4 to 5
Total Alkalinity/Acidity (%): _____
Odor: SULFUR
Color: BROWN

HAZARDOUS PROPERTIES

			X NONE
	Water Reactive		Reactive		Explosive
	Shock Sensitive		Peroxidizer		Polymerizable
	Radioactive		Pesticide Residuals		Ignitable
X	Corrosive		Toxic Vapor		Pathogen
	Biological		Etiological		
	Other				

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

WEAR APPROPRIATE GLOVES, PROTECTIVE CLOTHING AND FACE RESPIRATOR

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE _____ GENERATOR'S SIGNATURE: Jeanne Nordstrom

MSP FORM DATE (REV. FEB. 88)

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

P.O. BOX 1698 • KENNER, LA 70063

(504) 465-3310

MCDS Document # 8900205

JAN 09 1989

MSP CODE: ____

Generator Name: V.A. Medical Center
Facility Address: 3601 S. Sixth Ave
City, State, Zip: Tucson, AZ 85723
Technical Contact: J. Nordstrom
Title: Industrial Hygienist
Telephone NO.: 602-792-1450 Ext 6070
Facility EPA ID #: AZ0260010312

Bill To: Hazchem Environmental Service
Address: 3855 S. Evans #405
City, State, Zip: Tucson, AZ 85714
Telephone #: 602-741-0100
Company Contact: Brendan Carey
Container Size: 30 gallon Fiber Drum
EPA Waste No.: AZD982011843
Generating Process: Waste Lab Chemical
Common Name of Waste: Sulfuric Acid
Rate of Generation: 1 (Quan.) 30 gal (Units) PER Year (Time Interval)
Volume in Storage: 1 (Quan.) 30 gal (Units) IN 21C Fiber (Container Size and Type)

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

Sulfuric Acid	15 %
Soda Ash	65 %
Inert Clay	20 %
	100 %

Is Waste DOT Hazardous: [X] YES [ ] NO
Proper DOT Shipping Name: Corrosive Solid NOS
Hazard Class: Corrosive Solid ID No.: UN 1759
Transportation Equipment: Flat Bed Truck
Placarding: Corrosive for a 1000 lbs or more

METALS (EP Toxicity Test, mg/1)

Arsenic (As): N/S ↓ (Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se))
Silver (Ag): N/S ↓ (Copper (Cu), Nickel (Ni), Zinc (Zn))

INORGANICS (mg/1 or ppm)

Total CN: N/S ↓ (Free CN, Sulfide, Chloride, Bisulfite, Sulfite, Sulfate, Phosphate, Fluorine, Bromine, Chlorine)
Iodine: N/S
Asbestos: N/S

ORGANICS (mg/1 or ppm)

Endrin: N/S ↓ (Methoxychlor, Toxaphene, 2,4-D, 2,4,5-T, Phenolics, PCBs, Dioxin, TOC)
Organohalide: N/S
Mercaptans: N/S

N/S = None Suspected

Note: This Material Is Packed For Direct Feed

PHYSICAL DESCRIPTION

Physical State: [ ] Liquid [ ] Semi-solid [X] Solid
Phases/Layering: [X] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity: [X] High [ ] Medium [ ] Low
Type of Solids: [ ] Organic [X] Inorganic [ ] Mixed
Total Solids (wt. %): 100 Suspended Solids (wt. %): ____
BTU/lb: 2500 Ash Content: 15 % Water (by weight): None
Flash Point (°F): None Type: None
Specific Gravity: 2.1
Boiling Point, (°C): None Freezing Point, (°C): None
Vapor Pressure (mm Hg @ 24°C): None
pH (Avg): 4.5 (Range): 3 to 6
Total Alkalinity/Acidity (%): ____
Odor: Acidic
Color: Varies

HAZARDOUS PROPERTIES

[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [ ] Ignitable
[X] Corrosive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ____

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

Wear appropriate Glove, Protective Clothing, and respiratory protection.

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE: 1/3/89 GENERATOR'S SIGNATURE: Jeanne Nordstrom

MSP FORM 1040 (REV. 11/88)

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

RECYCLE / REUSE

MANIFEST № 905967

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: C A D 9 8 1 6 2 5 1 4 8 — Manifest Document No.:
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: FORT MACARTHUR, 920 WEST 36th STREET, SAN PEDRO, CALIFORNIA 90731
4. Generator's Phone (213) 742-7371

[redacted]

5. Transporter 1 Company Name: A AND S METAL RECYCLING, INC.
6. US EPA ID Number: C A D 9 8 1 4 0 2 4 0 7

[redacted]

7. Transporter 2 Company Name: SOUTHERN PACIFIC RAILROAD
8. US EPA ID Number: C A D 0 0 6 9 1 3 2 0 6

[redacted]

9. Designated Facility Name and Site Address: MARINE SHALE PROCESSORS, INC., HIGHWAY 90 EAST, MORGAN CITY, LOUISIANA 70380
10. US EPA ID Number: L A D 9 8 1 0 5 7 7 0 6

[redacted]

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	[redacted]
a. WASTE ORM-A, N.O.S. ORM-A NA 1693 (RQ=1 lbs)	0 1 1	D F	0 0 6 6 0 0 0 1 6 5	P G	[redacted]
b. WASTE FLAMMABLE LIQUID, N.O.S. FLAMMABLE UN 1993 (RQ=1001bs)	0 0 1	D F	0 0 0 6 0 0 0 0 1 5	P G	[redacted]
c. HAZARDOUS WASTE SOLID OR LIQUID, N.O.S. ORM-E NA 9189 (RQ=100 lbs)	0 0 1	D F	0 0 0 6 0 0 0 0 1 5	P G	[redacted]
d.					[redacted]

[redacted]

15. Special Handling Instructions and Additional Information
WEAR GOGGLES AND GLOVES
EMERGENCY RESPONSE GUIDE #: a) 58; b) 26; c) 31
IF UNABLE TO DELIVER, RETURN TO GENERATOR
MAIL GENERATOR COPIES TO
1425 SOUTH SAN PEDRO STREET ROOM 215
LOS ANGELES, CALIFORNIA 90015

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and rail according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
SUSIE WONG	Susie Wong	02 15 89

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
R. Loy O. Oakley	R. O. Oakley	02 15 89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
J. R. Hamilton	J. R. Hamilton	02 17 89

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Gail Leonard	Phil Leonard	03 14 89

FEB 13 1989

P- 998

GENERATOR'S WASTE MATERIAL PROFILE SHEET

2110 E. 15TH STREET, LOS ANGELES, CA 90021

PHONE
(213) 623-9443

8900962

Generator Name: FORT MACARTHUR
Facility Address: 920 WEST 36th STREET
City, State, ZIP: SAN PEDRO, CA 90731
Technical Contact: SUSIE WONG
Title: CHIEF SAFETY OFFICER
Telephone No.: (213) 742-7371 EXT:
Facility EPA I.D.#: CAD 981625148

MSP CODE:
Container Size: SEE ATTACHMENTS
EPA Waste No.: SEE ATTACHMENTS
REASON: SEE ATTACHMENTS
Common Name of Waste: LAB PACK
Rate of Generation: ____ (Quan) ____ (Units) PER ____ (Time Interval)
Volume In Storage 13 (Quan) [illegible] (Units) IN [illegible] (Container)
Is Waste DOT Hazardous ☒ YES ☐ NO
Proper DOT Shipping Name: SEE ATTACHMENTS
Hazard Class: SEE ATTACH ID No.: SEE ATTACH
Transportation Equipment: TRUCK/RAIL CAR
Placarding: IF APPLICABLE
Generating Process: SITE CLEAN UP

CHEMICAL COMPOSITION
(Totals must add up to 100%)

SEE ATTACHMENTS %

SEE LAB PACK %

METALS (EP Toxicity Test, mg/1)

Arsenic (As)	0	Silver (Ag)		0
Barium (Ba)	0	Copper (Gu)		0
Cadmium (Cd)	0	Nickel (Ni)		0
Chromium (Cr)	0	Zinc (Ni)		0
Lead (Pb)	0		0	0
Mercury (Hg)	0		0	0
Selenium (Se)	0		0	0

INORGANICS (mg/1 or ppm)

Total CN	0	Bromine		0
Free CN	0	Iodine		0
Sulfide	0	Asbestos		0
Bisulfite	0		0	0
Sulfite	0		0	0
Sulfate	0		0	0
Phosphate	0		0	0
Fluorine	0		0	0
Chlorine	0		0	0
Chloride	0		0	0

ORGANICS (mg/1 or ppm)

Endrin	0	Organohalide		0
Methoxychlor	0	Mercaptans		0
Toxaphene	0		0	0
2, 4-D	0		0	0
2, 4, 5-T	0		0	0
Phenol (lcs)	0		0	0
PCB	0		0	0
TOC	0		0	0
BOD	0		0	0
COD	0		0	0

PHYSICAL DESCRIPTION

Physical State ☒ Liquid ☐ Semi-Solid ☒ Solid
Phases/Layering ☐ None ☐ Bilayered ☐ Multilayered
Viscosity ☐ High ☐ Medium ☐ Low
Type of Solids ☐ Organic ☐ Inorganic ☒ Mixed
Total Solids (wt %) ____ Suspended Solids (wt %) ____
BTU/lb ____ % Ash Content ____
Flash Point (°F) ____ Type ____
Specific Gravity ____
Boiling Point (°C) ____ Freezing Point (°C) ____
Vapor Pressure (mm Hg @ 24°C) ____
ph (Avg) ____ (Range) ____ to ____
Total Alkalinity/Acidity (%) ____
Odor VARIOUS
Color VARIOUS

HAZARDOUS PROPERTIES

☐ NONE
☒ Ignitable ☐ Corrodes Steel ☐ Toxic Vapor
☐ Reactive ☐ Pyrophoric ☐ Shock Sensitive
☐ Explosive ☐ Water Reactive ☐ Radioactive
☐ Biological ☐ Pathogen ☐ Etiological
☐ Pesticide Residuals
☒ Other CAM-A PLM-E

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

WEAR GOGGLES AND GLOVES

VARIOUS EMERGENCY RESPONSE GUIDE #'s

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORT, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine that; no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE: FEB 08, 1989 SIGNATURE: Susie Wong

GENERATOR'S WASTE MATERIAL PROFILE SHEET

P- 998

2110 E. 15TH STREET, LOS ANGELES, CA 90021

PHONE (213) 623-9443

Generator Name: FORT MACARTHUR
Facility Address: 920 WEST 36TH STREET

City, State, ZIP: SAN PEDRO, CA 90731
Technical Contact: SUSIE WONG
Title: CHIEF SAFETY OFFICER
Telephone No.: (213) 742-7571 EXT:
Facility EPA I.D.#: CAL 9[illegible]25146

MSP CODE:
Container Size: SEE ATTACHMENTS
EPA Waste No.: SEE ATTACHMENTS
REASON: SEE ATTACHMENTS
Common Name of Waste: LAB PACK
Rate of Generation: ____ (Quan) ____ (Units) PER ____ (Time Interval)
Volume In Storage 13 15GAL (Quan) (Units) IN FIBER DRUMS (Container)
Is Waste DOT Hazardous ☐ YES ☐ NO
Proper DOT Shipping Name: SEE ATTACHMENTS
Hazard Class: SEE ATTACH ID No.: SEE ATTACH
Transportation Equipment: TRUCK/RAIL CAR
Placarding: IF APPLICABLE
Generating Process: SITE CLEAN UP

CHEMICAL COMPOSITION
(Totals must add up to 100%)

SEE ATTACHMENTS %

SEE LAB PACK %

PHYSICAL DESCRIPTION

Physical State ☒ Liquid ☐ Semi-Solid ☒ Solid
Phases/Layering ☐ None ☐ Bilayered ☐ Multilayered
Viscosity ☐ High ☐ Medium ☐ Low
Type of Solids ☐ Organic ☐ Inorganic ☒ Mixed
Total Solids (wt %) ____ Suspended Solids (wt %) ____
BTU/lb ____ % Ash Content ____
Flash Point (°F) ____ Type ____
Specific Gravity ____
Boiling Point (°C) ____ Freezing Point (°C) ____
Vapor Pressure (mm Hg @ 24°C) ____
ph (Avg) ____ (Range) ____ to ____
Total Alkalinity/Acidity (%) ____
Odor VARIOUS
Color VARIOUS

METALS (EP Toxicity Test, mg/1)

Arsenic (As)	0	Silver (Ag)	0
Barium (Ba)	0	Copper (Gu)	0
Cadmium (Cd)	0	Nickel (NI)	0
Chromium (Cr)	0	Zinc (NI) 0	0
Lead (Pb)	0	0	0
Mercury (Hg)	0	0	0
Selenium (Se)	0	0	0

INORGANICS (mg/1 or ppm)

Total CN	0	Bromine	0
Free CN	0	Iodine	0
Sulfide	0	Asbestos	0
Bisulfite	0	0	0
Sulfite	0	0	0
Sulfate	0	0	0
Phosphate	0	0	0
Fluorine	0	0	0
Chlorine	0	0	0
Chloride	0	0	0

ORGANICS (mg/1 or ppm)

Endrin	0	Organohalide	0
Methoxychlor	0	Mercaptans	0
Toxaphene	0	0	0
2. 4-D	0	0	0
2. 4. 5-T	0	0	0
Phenol (lcs)	0	0	0
PCB	0	0	0
TOC	0	0	0
BOD	0	0	0
COD	0	0	0

HAZARDOUS PROPERTIES

☐ NONE
☒ Ignitable ☐ Corrodes Steel ☐ Toxic Vapor
☐ Reactive ☐ Pyrophoric ☐ Shock Sensitive
☐ Explosive ☐ Water Reactive ☐ Radioactive
☐ Biological ☐ Pathogen ☐ Etiological
☐ Pesticide Residuals
☒ Other ORM-A, ORM-E

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

WEAR GOGGLES AND GLOVES

VARIOUS EMERGENCY RESPONSE GUIDE #'S

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORT, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine that; no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE: FEB 08 1989 SIGNATURE: [signature]

A/S ENVIRONMENTAL RECOVERY, INC.

OUR REFERENCE P-998

YOUR REFERENCE
FORT MACARTHUR
920 WEST 35th STREET
SAN PEDRO, CA 90731
CAD 9816257+8

CERTIFICATION LETTER

I am an authorized employee of A & S Environmental Recovery, Inc. I hereby certify that the Lab Packs represented by this Materials Characterization Data sheet and lab packing lists are prepared and shipped in full compliance with the Marine Shale Processors, Inc. Lab Pack Guidelines.

DATED: 8 FEB. 1989

SIGNED: Steve W.

2008 Mateo Place • Los Angeles, California 90021 • (213) 623-9443 • FAX: (213) 488-9854

ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 1

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1 X 1 GAL	NA 2783	N/A
2						
3						
4	NON-REGULATED MATERIALS					
5						
6	HAND SOAP	L	POLY	1 X 1 QT		N/A
7						
8						
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 2

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1X1GAL	NA 2783	N/A
2						
3						
4	NON-REGULATED MATERIALS					
5						
6	HAND SOAP	L	POLY	1X1QT		N/A
7						
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 3

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1 X 16AL	NA 2783	N/A
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #:4

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1 X 16AL	NA 2783	N/A
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 5

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1 X 1 GAL	NA 2783	N/A
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 6

ITEM #	'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1 DIAZINON	L	METAL	1 X 1 GAL	NA 2783	N/A
2					
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 7

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1 X 1GAL	NA 2783	N/A
2						
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 8

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1 X 1GAL	NA 2783	N/A
2						
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ATTACHMENT FOR *FORT MACARTHUR*

D.O.T. 21C *15* DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: *9*

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	*DIAZINON*	*L*	*METAL*	*1 X 1 GAL*	*NA 2783*	*N/A*
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 10

ITEM #	'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1 DIAZINON	L	METAL	1 X 1GAL	NA 2783	N/A
2					
3					
4					
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ATTACHMENT FOR FORT MACARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: WASTE ORM-A, N.O.S. NA 1693

INVENTORY LIST #: 11

ITEM #		'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1	DIAZINON	L	METAL	1 X 1 GAL	NA 2783	N/A
2						
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ATTACHMENT FOR [redacted] FT. McARTHUR

D.O.T. 21C 15 DF GALLON

SHIPPING NAME: HAZARDOUS WASTE SOLID OR LIQUID, N.O.S. NA 9189

INVENTORY LIST #: 12

ITEM #	'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1 BIRD REPELLENT	S	FIBER	11/1/2 LB	NA9189	N/A
2 (CONTAINS POLY BUTENE)					
3					
4					
5					
6					
7					
8					
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30					

ATTACHMENT FOR FORT McCARTHUR

D.O.T. 21C DF GALLON 15

SHIPPING NAME: WASTE FLAMMABLE LIQUID, N.O.S. UN 1993

INVENTORY LIST #: 13

ITEM #	'S' or 'L'	CONTAINER	QTY/SIZE	UN/NA NO.	EPA WASTE CODE NO.
1 petroleum oil	L	poly	1-1qt	1270	D001
2					
3					
4					
5					
6					
7					
8					
9					
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12					
13					
14					
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26					
27					
28					
29					
30					

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) ✓ REUSE/RECYCLE

Form Approved OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA836001030280 | Manifest Document No.: 00000
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Veterans Administration Medical Center
4150 Clement Street
San Francisco, CA 94121

4. Generator's Phone (415) 221-4810

A. State Manifest Document Number: [illegible]
B. State Generator's ID: AT AIX [illegible] EXE MPT [illegible]

5. Transporter 1 Company Name: North State Environmental
6. US EPA ID Number: CAD982462814

C. State Transporter's ID: 9022740F
D. Transporter's Phone: (415) 588-2838

7. Transporter 2 Company Name: North State Environmental
8. US EPA ID Number: CAD982462814

E. State Transporter's ID: 9902734 [illegible]
F. Transporter's Phone: (415) 588-2838

9. Designated Facility Name and Site Address:
Marine Shale Processors, Inc.
Highway 90 East
Morgan City, Louisiana 70380

10. US EPA ID Number: LAD981057706

G. State Facility's ID: [illegible]
H. Facility's Phone: (504) 631-3161

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Flammable Solid NOS, Flammable Solid, UN1325 Drums 3,12 D003/D008	2	DF	20	P	D001/RR [illegible]
b. Waste Organic Peroxide, Solid NOS, Organic Peroxide, NA9187 Drum 8	1	DF	10	P	D003 RR
c. Waste Corrosive Liquid NOS, Corrosive Material, UN1760 Drums 10,11	2	DF	10	P	D001/RR D002
d. Waste Flammable Liquid NOS, Flammable Liquid, UN1993 Drums 1,9	2	DF	60	P	D001/RR D002/U188

J. Additional Descriptions for Materials Listed Above:
Lab packs: (See attached container sheets) Recycle
MSP approval code NSTE/VADM/8809531/LP
D: add'l EPA codes: P108/U219/U133
A: 2x5gal; B: 1x5gal; C: 2x5gal; D: 1x5gal, 1x30gal

K. Handling Codes for Wastes Listed Above: [illegible]

15. Special Handling Instructions and Additional Information
Use gloves, goggles, and respirator if drums are opened.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
JOHN W. MAHONEY	John W. Mahoney	01 17 89

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
KURT DREGER	Kurt Dreger	01 17 89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
John E Bunner	John E. Bunner	01 21 89

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Gail Leonard	Gail Leonard	01 26 89

PREVIOUS EDITION IS OBSOLETE

EPA Form 8700-22 (Rev. 9/88) Original-DEQ, Green-Generator's 2nd, Yellow-Disposer, Pink-Transporter, Gold-Generator 1st DEQ FORM HW-3 (R9/88)

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

REUSE/RECYCLE

Form Approved OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA8360010328 — Manifest Document No.: 00001
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Veterans Administration Medical Center
4150 Clement Street
San Francisco, CA 94121

4. Generator's Phone (415) 221-4810

A. State Manifest Document Number: [illegible]
B. State Generator's ID: T.A.X.E.E.X.E.M.P.T

5. Transporter 1 Company Name: North State Environmental
6. US EPA ID Number: CAD982462811
C. State Transporter's ID: 202240
D. Transporter's Phone: (415) 588-2838

7. Transporter 2 Company Name: North State Environmental
8. US EPA ID Number: [illegible]
E. State Transporter's ID: 9502737
F. Transporter's Phone: (415) 588-2838

9. Designated Facility Name and Site Address:
Marine Shale Processors, Inc.
Highway 90 East
Morgan City, Louisiana 70380

10. US EPA ID Number: LAD981057706
G. State Facility's ID: [illegible]
H. Facility's Phone: (504) 631-3161

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Poison B Liquid NOS, Poison B, UN2810 Drum 2	1	DF	50	P	P030/RR P106/P098
b. Waste Poison B Solid NOS, Poison B, UN2811 Drums 5,6	2	DF	20	P	D002/RR D003/D005
c. Waste Oxidizer NOS, Oxidizer, UN1479 Drum 7	1	DF	10	P	D002/RR P120
d. Hazardous Waste Solid NOS, ORM-E, NA9189 Drum 4	1	DF	10	P	P105/RR D003

J. Additional Descriptions for Materials Listed Above:
Lab. packs. See attached contents. Reuse/Recycle
MSP approval code NSTE/VADM/8809531/LP
A: 1x30gal, B: 2x5gal, C: 1x5gal, D: 1x5gal

K. Handling Codes for Wastes Listed Above: [illegible]

15. Special Handling Instructions and Additional Information:
Use gloves, goggles, and respirator if drums are opened.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: JOHN W. MAHONEY — Signature: John W. Mahoney — Month Day Year: 10/17/89

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: KURT DREGER — Signature: Kurt Dreger — Month Day Year: 10/17/89

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: John E. Bunner — Signature: John E. Bunner — Month Day Year: 10/21/89

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Gail Leonard — Signature: [illegible] — Month Day Year: 10/26/89

PREVIOUS EDITION IS OBSOLETE

EPA Form 8700-22 (Rev. 9/88) Original-DEQ, [illegible]-Generator's 2nd, Yellow-Disposer, Pink-Transporter, Gold-Generator 1st DEQ FORM HW-3 [illegible]

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

MCDS Document # 8809531

SALES (504) 465-3310

MSP CODE: _____

VETERANS ADMINISTRATION

DEC 02 1988

#1 Generator Name MEDICAL CENTER
Facility Address 4150 CLEMENT STREET
City, State, Zip SAN FRANCISCO CA. 94121
Technical Contact JOHN MAHONEY
Title INDUSTRIAL HYGIENIST
Telephone NO. (415) 221-4810 EXT: 3070
Facility EPA ID # CA9360010328

#2 CHEMICAL COMPOSITION (No Trade Name)
(Totals must add up to 100%)

SEE ATTACHED CONTAINER SHEETS	%
	%
	%
	%
	%
	%
	%

#3 METALS (EP Toxicity Test, mg/l) SEE ATTACHED CONTAINER SHEETS

Arsenic (As)		Silver (Ag)	
Barium (Ba)		Copper (Cu)	
Cadmium (Cd)		Nickel (Ni)	
Chromium (cr)		Zinc (Zn)	
Lead (Pb)			
Mercury (Hg)			
Selenium (Se)			

#4 INORGANICS (mg/l or ppm) SEE ATTACHED CONTAINER SHEETS

Total CN		Iodine	
Free CN		Asbestos	
Sulfide			
Chloride			
Bisulfite			
Sulfite			
Sulfate			
Phosphate			
Fluorine			
Bromine			
Chlorine			

#5 ORGANICS (mg/l or ppm)

Endrin		Organohalide	
Methoxychlor		Mercaptans	
Toxaphene			
2,4-D	SEE ATTACHED CONTAINER		
2,4,5-T	SHEETS		
Phenolics			
PCBs			
Dioxin			
TOC			

#6 Bill To: NORTH STATE ENVIRONMENTAL
Company Contact: KURT DREGER
Container Size: SEE ATTACHED CONTAINER SHEETS
EPA Waste No. SEE ATTACHED CONTAINER SHEETS
Generating Process DISPOSAL OF OUTDATED CHEMICALS
Common Name of Waste LAB PACKS
Rate of Generation ONE (Quan) TIME (Units) PER ONLY (Time Interval)
Volume in Storage ONE (Quan) TIME (Units) IN ONLY (Container Size and Type)
Is Waste DOT Hazardous . [X] YES | | NO
Proper DOT Shipping Name SEE ATTACHED
Hazard Class _____ ID No. CONTAINER SHEETS
Transportation Equipment TRACTOR AND TRAILER
Placarding AS REQUIRED

#7 PHYSICAL DESCRIPTION

Physical State		Liquid		Semi-solid		Solid	
Phases/Layering		Uni-Layer		Bilayer		Multilayer	
Viscosity		High		Medium		Low	
Type of Solids		Organic		Inorganic		Mixed	

Total Solids (wt. %) _____ Suspended Solids (wt. %) _____
BTU/lb _____ % Ash Content _____ % Water (by weight) _____
Flash Point (°F) _____ Type _____
Specific Gravity _____
Boiling Point, (°C) _____ Freezing Point, (°C) _____
Vapor Pressure (mm Hg @ 24°C) _____
pH (Avg) _____ (Range) _____ to _____
Total Alkalinity/Acidity (%) _____
Odor SEE ATTACHED CONTAINER
Color SHEETS

#8 HAZARDOUS PROPERTIES

	Water Reactive	Reactive	Explosive
	Shock Sensitive	Pyrophoric	Polymerizable
	Radioactive	Pesticide Residuals	Ignitable
	Corrosive	Toxic Vapor	Pathogen
	Biological	Etiological	
	Other SEE ATTACHED CONTAINER SHEETS		NONE

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:
NORMAL SAFETY PRECAUTIONS

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 11/30/88 GENERATOR'S SIGNATURE: John W. Mahoney

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11 30 88

GENERATOR LOCATION: 4150 Clement St., SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 1 PAGE 1 OF 1

T DESCRIPTION: Waste Flammable Liquid NOS (UN) NA NO: 1993
(Circle One)

CONTAINER SIZE: 30 CONTAINER TYPE: FIBER
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	BENZIDINE dihydrochloride	1	4oz	FLAMMABLE LIQUID	1993	NRM
02	Phenylhydrazine hydrochloride	1	100g	↓	↓	NRM
03	ETHYL BROMOACETATE	1	100g			D001/D002
04	PHENOL	2	1 lb			U188
05	STRYCHNINE SULFATE	1	5g			P108
06	PENTACHLOROTHIOPhenol	1	100g			D001
07	2,4-Dinitrophenol	1	100g			P048
08	2,6-Dichlorophenol-indophenol	1	25g			D001
09	TRI-N-PROPYL TIN CHLORIDE	1	10g			D001
10	TRI-Phenylmethyl Phosphonium Bromide	1	10g			D001
11	P-Nitrophenol	1	10g			NRM
12	p-nitroaniline	1	50g			NRM
13	thiourea	1	100g			U219
14	Hydrochlorthiazide	1	10g			D001
15	Ethyl Chloroformate	1	500g			D001
16	Hydrogen Flouride 20% Pyridine 80%	1	100g	↓	↓	D001

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger (signature)
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement St, SF GENERATOR EPA ID: CA83600010328

LAB PACK CONTAINER NO: 2 PAGE 1 OF 1

DOT DESCRIPTION: Waste Poison B, Liquid NOS (UN)/NA NO: 2810
(Circle One)

CONTAINER SIZE: 30 (30 Gal. or less) CONTAINER TYPE: Fiber (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	(UN)/NA	EPA WASTE NO.
01	Potassium Ferrocyanide with trace amounts of Hydrogen Cyanide (Dual purpose electrostatic sol).	8	1 gal	Poison B	2810	P030
02						
03						
04	Sodium Cyanide	1	100g	Poison B	2811	P106
05	Potassium Cyanide	1	100g	Poison B	2811	P098
06						
07						
08						
09						
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14						
15						
16						

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement St, SF GENERATOR EPA ID: CA8360010326

LAB PACK CONTAINER NO: 3 PAGE 1 OF 1

DOT DESCRIPTION: WASTE FLAMMABLE SOLID NOS UN/NA NO: 1325
(Circle One)

CONTAINER SIZE: 5 CONTAINER TYPE: POLY
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	TITANIUM TRICHLORIDE	1	100g	FLAMMABLE SOLID	1325	D001/D003
02						
03						
04						
05						
06						
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I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11 30 88

GENERATOR LOCATION: 4150 Clement St, SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 4 PAGE 1 OF 1

T DESCRIPTION: Hazardous Waste Solid NOS UN/NA NO: 9189
(Circle One)

CONTAINER SIZE: 5 CONTAINER TYPE: Poly
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	Sodium Azide	1	10g	ORM-E	9189	P105
02	Benzoyl Chloride	1	1 lb	ORM-E	↓	D003
03						
04						
05						
06						
07						
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16						

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. [signature] 2. 11-30-88
SIGNATURE DATE

3. KURT DREGER 4. OPERATIONS CHEMIST
NAME (Type or Print) TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement Street, SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 5 PAGE 1 OF 1

DT DESCRIPTION: Waste Poison B Solid, NOS (UN)/NA NO: 2811
(Circle One)

CONTAINER SIZE: 5 CONTAINER TYPE: Poly
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	Barium chloride	1	1 lb	Poison B	2811	D005
02	thiophosgene	1	25g	Poison B	2811	D002
03						
04						
05						
06						
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I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement Street, SF GENERATOR EPA ID: CA8360010332

LAB PACK CONTAINER NO: 6 PAGE 1 OF 1

DOT DESCRIPTION: Waste Poison B Solid, NOS (UN)/NA NO: 2811
(Circle One)

CONTAINER SIZE: 5 CONTAINER TYPE: POLY
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	Calcium Hydride	1	100g	Poison B	2811	D003
02						
03						
04						
05						
06						
07						
08						
09						
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16						

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. [signature] SIGNATURE 2. 11-30-88 DATE

3. KURT DREGER NAME (Type or Print) 4. OPERATIONS CHEMIST TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement St., SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 7 PAGE 1 OF 1

DOT DESCRIPTION: Waste Oxidizer NOS UN/NA NO: 1479
(Circle One)

CONTAINER SIZE: 5 (30 Gal. or less) CONTAINER TYPE: poly (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	VANADIUM PENTOXIDE	1	100g	OXIDIZER	1479	P120
02	PHOSPHOROUS PENTOXIDE	1	1 lb	OXIDIZER	1479	D002
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04						
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I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement St, SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 8 PAGE 1 OF 1

DOT DESCRIPTION: WASTE ORGANIC PEROXIDE, SOLID, NOS UN/(NA) NO: 9187
(Circle One)

CONTAINER SIZE: 5 gal (30 Gal. or less) CONTAINER TYPE: Poly (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/(NA)	EPA WASTE NO.
01	BENZOYL PEROXIDE	1	1 lb	ORGANIC PEROXIDE	9187	D003
02						
03						
04						
05						
06						
07						
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16						

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement St., SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 9 PAGE 1 OF 1

DOT DESCRIPTION: WASTE FLAMMABLE LIQUID NOS (UN) NA NO: 1993
(Circle One)

CONTAINER SIZE: 5 CONTAINER TYPE: poly
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	(UN)/NA	EPA WASTE NO.
01	Hydrazine, Anhydous	1	120ml	FLAMMABLE LIQUID	1993	U133
02	Hydrazine, dihydrochloric ACID	1	100g	↓	1993	U133
03						
04						
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I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement St., SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 10 PAGE 1 OF 1

DESCRIPTION: Waste Corrosive Liquid NOS (UN)/NA NO: 1760
(Circle One)

CONTAINER SIZE: 5 CONTAINER TYPE: POLY
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	0.1N Perchloric Acid in Glacial Acetic Acid	1	1 pt	Corrosive material	1760	D001/D002
02	0.33M Perchloric Acid	1	50ml	↓	1760	D001/D002
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

[signature] 2. 11-30-88
SIGNATURE DATE

3. KURT DREGER 4. OPERATIONS CHEMIST
NAME (Type or Print) TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 Clement St., SF GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 11 PAGE 1 OF 1

DOT DESCRIPTION: Waste Corrosive Liquid NOS (UN) NA NO: 1470
(Circle One)

CONTAINER SIZE: 5 CONTAINER TYPE: POLY
(30 Gal. or less) (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	UN/NA	EPA WASTE NO.
01	Propionic Acid	1	100g	Corrosive Material	1759	D002
02	Caprylic Acid	1	10g	↓	1759	D002
03	4,4'-Dinitro-2,2'-Stilbenedisulfonic Acid	1	100g	↓	1759	D002
04	Phenylacetic Acid	1	100g	↓	1759	D002
05	n-valeric Acid	1	100g	↓	1759	D002
06	ISOVALERIC ACID	1	100ml	↓	1759	D002
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. [signature] SIGNATURE 2. 11-30-88 DATE

3. KURT DREGER NAME (Type or Print) 4. OPERATIONS CHEMIST TITLE

GENERATOR NAME: VETERANS ADMINISTRATION MEDICAL CENTER DATE: 11-30-88

GENERATOR LOCATION: 4150 CLEMENT STREET GENERATOR EPA ID: CA8360010328

LAB PACK CONTAINER NO: 12 PAGE 1 OF 1

T DESCRIPTION: Waste Flammable Solid NOS (UN)/NA NO: 1325
(Circle One)

CONTAINER SIZE: 5 (30 Gal. or less) CONTAINER TYPE: Poly (Fiber or Poly)

ITEM NO.	MATERIAL DESCRIPTION	QUANTITY	VOLUME	DOT HAZARD CLASS	(UN)/NA	EPA WASTE NO.
01	NO. 2813 RANEY NICKEL CATALYST POWDER	1	1 lb	Flammable Solid	1325	D001/D005/D008
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						

I AM AN AUTHORIZED EMPLOYEE OF NORTH STATE ENVIRONMENTAL.
I HEREBY CERTIFY THAT THE LAB PACK REPRESENTED BY THIS MATERIAL CHARACTERIZATION DATA SHEET AND LAB PACKING LIST IS PREPARED AND SHIPPED IN FULL COMPLIANCE WITH THE MARINE SHALE PROCESSORS, INC. LAB PACK GUIDELINES.

1. Kurt Dreger
SIGNATURE

2. 11-30-88
DATE

3. KURT DREGER
NAME (Type or Print)

4. OPERATIONS CHEMIST
TITLE

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 4307
BATON ROUGE, LOUISIANA 70804

RECYCLE / REUSE

MANIFEST Nº 905177

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

120085

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. U T 5 2 1 0 0 9 0 0 0 2 — Manifest Document No.

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Tooele Army Depot
South Area
Tooele, UT 84074 Lyman Thorpe

4. Generator's Phone (801) 833-4413

5. Transporter 1 Company Name
Tecrep, Inc

6. US EPA ID Number U T D 9 8 1 5 5 2 1 1 8 5

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address
MARINE SHALE PROCESSORS, INC.
HIGHWAY 90 EAST
MORGAN CITY, LOUISIANA 70380

10. US EPA ID Number L A D 9 8 1 0 5 7 7 0 6

(504) 631-8016

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
GENERATOR a.	Waste Flammable Liquid, NOS Flammable Liquid UN1993	0 1 3	D M	0 0 7 1 5	G	F999 D001 F002
b.	Hazardous Waste Solid, NOS ORM-E NA9189 (F002)	0 2 5	D M	0 1 3 7 5	G	F002 F999
c.						
d.						

[redacted] RECYCLE / REUSE — Key Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

NOTE: 30-55 gal drums overpacked in 85 gal drums.
Vendor 7-55 gallon 85's taken

IF UNABLE TO DELIVER, RETURN TO GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Lyman Thorpe	Lyman Thorpe	10	11	89

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
JOHN W. CHRISTENSEN / Geo. Rushing	John W. Christensen D. Rushing	10	15	89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
11-a - and 11-b - F999 not La. or fed reg.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Gail Leonard	Gail Leonard	10	21	89

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

P.O. BOX 1698 • KENNER, LA 70063

(504) 465-3310

MCDS Document # ~~8900418~~ JAN 17 1988

MSP CODE:

Generator Name	Tooele Army Depot
Facility Address	South Area
City, State, Zip	Tooele, UT. 84074
Technical Contact	Lyman Thorpe
Title	Env. Coord.
Telephone NO.	(801) 833-4413 EXT:
Facility EPA ID #	UT5210090002

Bill To:	PSC ENVIRONMENTAL
Address:	2230 SOUTH MAIN STREET
City, State, Zip:	SALT LAKE CITY, UTAH 84115
Telephone #:	(801) 486-9100
Company Contact:	PHIL BALCER / SLC
Container Size:	55 GAL DRUM
EPA Waste No.	(F002)
Generating Process	Spill Clean-up Debris & Sludge
Common Name of Waste	WASTE SOLVENT SLUDGE
Rate of Generation	ONE (Quant) (Units) PER TIME (Time Interval)
Volume in Storage	12 DRUMS (Quant) (Units) IN 55 GAL (Container Size and Type)
Is Waste DOT Hazardous	[X] YES [ ] NO
Proper DOT Shipping Name	HAZARDOUS WASTE SOLID, NOS
~~Hazard Class~~ NA9189 ~~ID No.~~	ORM-E
Transportation Equipment	
Placarding	

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

	%
Chemical Sludge	
Composed of:	
Carbon Tetrachloride	10
111 Trichloroethane	10
Dimethyl-Methylphosphonate	5
MonoChlorobenzene	1
Fuel Oil (congealed)	74

METALS (EP Toxicity Test, mg/l)

Arsenic (As)	None Suspected	Silver (Ag)	None Suspected
Barium (Ba)	↓	Copper (Cu)	↓
Cadmium (Cd)	↓	Nickel (Ni)	↓
Chromium (Cr)	↓	Zinc (Zn)	↓
Lead (Pb)	↓		↓
Mercury (Hg)	↓		↓
Selenium (Se)	↓		↓

INORGANICS (mg/l or ppm)

Total CN	None Suspected	Iodine	None Suspected
Free CN	↓	Asbestos	↓
Sulfide	↓		
Chloride	↓		
Bisulfite	↓		
Sulfite	↓		
Sulfate	↓		
Phosphate	↓		
Fluorine	↓		
Bromine	↓		
Chlorine	↓		

ORGANICS (mg/l or ppm)

Endrin	None Suspected	Organohalide	None Suspected
Methoxychlor	↓	Mercaptans	↓
Toxaphene	↓		
2,4-D	↓		
2,4,5-T	↓		
Phenol(ics)	↓		
PCBs	↓		
Dioxin	↓		
TOC	↓		

PHYSICAL DESCRIPTION

Physical State	[ ] Liquid	[ ] Semi-solid	[X] Solid
Phases/Layering	[X] Uni-Layer	[ ] Bilayer	[ ] Multilayer
Viscosity	[X] High	[ ] Medium	[ ] Low
Type of Solids	[ ] Organic	[ ] Inorganic	[X] Mixed

Total Solids (wt. %) 100 Suspended Solids (wt. %) -0-

BTU/lb 10,000 % Ash Content 95 % Water (by weight) -0-

Flash Point (°F) >140 Type —

Specific Gravity .99

Boiling Point (°C) — Freezing Point (°C) —

Vapor Pressure (mm Hg @ 24°C) —

pH (Avg) 7 (Range) 6 to 8

Total Alkalinity/Acidity (%) —

Odor Solvent - Carbon Tetrachloride

Color Dark

HAZARDOUS PROPERTIES

[ ] NONE

[ ] Water Reactive	[ ] Reactive	[ ] Explosive
[ ] Shock Sensitive	[ ] Pyrophoric	[ ] Polymerizable
[ ] Radioactive	[ ] Pesticide Residuals	[ ] Ignitable
[ ] Corrosive	[ ] Toxic Vapor	[ ] Pathogen
[ ] Biological	[ ] Etiological	

[ ] Other Solvent Contamination

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: This material is in drums that originally contained the liquid from MCDS # 8809746. It was transfered to non leaking drums. This material is a solid w/no liquids.

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 1-9-89 GENERATOR'S SIGNATURE: Lyman W Thorpe

MSP FORM 1048 (REV. FEB/87)

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

US v MSP Rec'd from MSP Vol. 12 Exh. 253 Docs U.S. MANIFESTS Cont.

Releasable PI Hearing

MSD007

MATERIALS CHARACTERIZATION DATA SHEET

MCDS Document # ~~8800617~~ JAN 17 1988

P.O. BOX 1698 • KENNER, LA 70063
SALES (504) 465-3310

MSP CODE: _____

Generator Name: TOOELE ARMY DEPOT
Facility Address: SOUTH AREA
City, State, Zip: TOOELE, UT. 84074
Technical Contact: LYMAN THORPE
Title: ENV. COORD.
Telephone NO. (801) 833-4413 EXT: _____
Facility EPA ID #: UT5210090002

Bill to: PSC ENVIRONMENTAL
Address: 2230 SOUTH MAIN STREET
City, State, Zip: SALT LAKE CITY, UTAH 84115
Telephone #: (801) 486-9100
Company Contact: PHIL BALCER
Container Size: 55 Gal Dr.
EPA Waste No. (F002)
Generating Process: SPILL CLEAN-UP DEBRIS
Common Name of Waste: SOLVENT CLEAN UP WASTE
Rate of Generation: ONE (Quan) (Units) PER TIME (Time Interval)
Volume in Storage: 11 (Quan) Dr. (Units) IN: 55 Gal Dr. (Container Size and Type)

Is Waste DOT Hazardous [X] YES [ ] NO
Proper DOT Shipping Name: HAZARDOUS WASTE SOLID, NOS
Hazard Class: NA9189 ID No. ORM-E
Transportation Equipment: _____
Placarding: _____

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

ALL THE MATERIAL CONSIST 100 %
OF HOSES (PLASTIC), PAPER %
TYVECK SUITS, RUBBER GLOVES, %
ABSORBANT SAUSAGE SHAPED %
PADS. %
* MATERIAL IS CONTAMINATED %
WITH SOLVENTS IN PPM %

(SEE BELOW FOR LIST)

METALS (EP Toxicity Test, mg/l)

Arsenic (As)	NONE SUSPECTED	Silver (Ag)	NONE SUSPECTED
Barium (Ba)		Copper (Cu)	
Cadmium (Cd)		Nickel (Ni)	
Chromium (cr)		Zinc (Zn)	
Lead (Pb)			
Mercury (Hg)			
Selenium (Se)			

INORGANICS (mg/l or ppm)

Total CN	NONE SUSPECTED	Iodine	NONE SUSPECTED
Free CN		Asbestos	
Sulfide			
Chloride			
Bisulfite			
Sulfite			
Sulfate			
Phosphate			
Fluorine			
Bromine			
Chlorine			

ORGANICS (mg/l or ppm)

Endrin	NONE SUSPECTED	Organohalide	NONE SUSPECTED
Methoxychlor		Mercaptans	
Toxaphene			
2, 4-D			
2,4,5-T			
Phenolic(s)			
PCBs			
Dioxin			
TOC			

PHYSICAL DESCRIPTION

Physical State	[ ] Liquid	[ ] Semi-solid	[X] Solid	
Phases/Layering	[X] Uni-Layer	[ ] Bilayer	[ ] Multilayer	
Viscosity	[X] High	[ ] Medium	[ ] Low	
Type of Solids	[ ] Organic	[ ] Inorganic	[X] Mixed	

Total Solids (wt. %): 100 Suspended Solids (wt. %): —
BTU/lb: _____ % Ash Content: 100 % Water (by weight): —
Flash Point (°F): 7140° Type: —
Specific Gravity: 1.0
Boiling Point, (°C): — Freezing Point, (°C): —
Vapor Pressure (mm Hg @ 24°C): —
pH (Avg): 7 (Range): 6 to 8
Total Alkalinity/Acidity (%): —
Odor: NONE
Color: VARIED

HAZARDOUS PROPERTIES

[ ] Water Reactive	[ ] Reactive	[ ] NONE	
[ ] Shock Sensitive	[ ] Pyrophoric	[ ] Explosive	
[ ] Radioactive	[ ] Pesticide Residuals	[ ] Polymerizable	
[ ] Corrosive	[ ] Toxic Vapor	[ ] Ignitable	
[ ] Biological	[ ] Etiological	[ ] Pathogen	

[ ] Other: CONTAMINATED W/SOLVENT

SOLVENT CONTAMINA

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: CARBON TETRACHLORIDE
1,1,1 TRICHLOROETHANE, DIMETHYL-METHYLPHOSPHONA
MONOCHLOROBENZENE
— ALL IN PPM —

SEE MCDS FOR ORIGINAL # 8809746

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 1-9-89 GENERATOR'S SIGNATURE: Lyman V. Thorpe

MSP FORM 1040 (REV. FEB/88)

1-9-89

Marine Shale
110 James Dr.West Suite 120
St.Rose,La. 70087

Attn: Liz Harney

Dear Liz.,

Please change our Profile #8900417 to show the BTU/LB to be 4-5000 and the ash content to be 30%.

Thank you

Lyman H Thorpe

Lyman Thorpe
Env.Coordinator

Tooele Army Depot
South Area/CAMDS
Tooele ,Utah 84074

8309746

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

MCDS Document # ____________

DEC 12 1988

P.O. BOX 1698 • KENNER, LA 70063
SALES (504) 465-3310

MSP CODE: ____________

Generator Name: TOOELE ARMY DEPOT
Facility Address: ~~[illegible]~~S / South Ar.
City, State, Zip: TOOELE, UT. 84074
Technical Contact: LYMAN THORPE
Title: ENV. COORD.
Telephone NO. (801) 833-4413 EXT: ______
Facility EPA ID #: UT5210090002

Bill To: PSC ENVIRONMENTAL
Address: 6348 QUINN DR.
City, State, Zip: BATON ROUGE, LA
Telephone #: (504) 291-2765
Company Contact: Philip Balcer / SLC
Container Size: 55 GAL DR.
EPA Waste No. (D001)(U211)(U226)
Generating Process: OUT OF DATE CHEMICALS
Common Name of Waste: WASTE SOLVENT MIXTURE
Rate of Generation: ______ (Quan) ______ (Units) PER ONE TIME (Time Interval)
Volume in Storage: 27 DRUMS (Quan) (Units) IN 55 GAL. (Container Size and Type)

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

CARBON TETRACHLORIDE	5	%
111 TRICHLOROETHANE	29	%
DIMETHYL - METHYLPHOSPHONATE	30	%
MONOCHLOROBENZENE	10	%
FUEL OIL	26	%
		%

Is Waste DOT Hazardous [X] YES [ ] NO
Proper DOT Shipping Name: HAZARDOUS WASTE LIQUID, NOS
Hazard Class: ORM-E ID No. NA9189
Transportation Equipment: DRUMS
Placarding: —

METALS (EP Toxicity Test, mg/1)

Arsenic (As)	NONE SUSPECTED	Silver (Ag)	NONE SUSPECTED
Barium (Ba)	↓	Copper (Cu)	↓
Cadmium (Cd)	↓	Nickel (Ni)	↓
Chromium (cr)	↓	Zinc (Zn)	↓
Lead (Pb)	↓		↓
Mercury (Hg)	↓		↓
Selenium (Se)	↓		↓

PHYSICAL DESCRIPTION

Physical State: [X] Liquid [ ] Semi-solid [X] Solid
Phases/Layering: [X] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity: ~~[ ] High~~ [ ] Medium [X] Low
Type of Solids: [ ] Organic [ ] Inorganic [ ] Mixed
Total Solids (wt. %) 2 Suspended Solids (wt. %) —
BTU/lb ______ % Ash Content ______ % Water (by weight) 0
Flash Point (°F) ______ Type ______
Specific Gravity ______
Boiling Point, (°C) N/A Freezing Point, (°C) N/A
Vapor Pressure (mm Hg @ 24°C) N/A
pH (Avg) 7 (Range) 6 to 8
Total Alkalinity/Acidity (%) —
Odor: CARBON TETRACHLORIDE
Color: DARK

INORGANICS (mg/1 or ppm)

Total CN	NON-SUSPECTED	Iodine	NONE SUSPECTED
Free CN	↓	Asbestos	↓
Sulfide	↓		
Chloride	↓		
Bisulfite	↓		
Sulfite	↓		
Sulfate	↓		
Phosphate	↓		
Fluorine	↓		
Bromine	↓		
Chlorine	↓		

HAZARDOUS PROPERTIES

[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [X] Ignitable
[ ] Corrosive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ______

ORGANICS (mg/1 or ppm)

Endrin	NONE SUSPECTED	Organohalide	NONE SUSPECTED
Methoxychlor	↓	Mercaptans	↓
Toxaphene	↓		
2, 4-D	↓		
2,4,5-T	↓		
Phenol(ics)	↓		
PCBs	↓		
Dioxin	↓		
TOC	↓		

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 7 Dec 88 GENERATOR'S SIGNATURE [signature] Lyman X Thorpe

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

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Vol. 13 Exh. 253 Mace U.S. MANIFESTS
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PI Hearing

MSD007

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JAN 04 1989 MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

P.O. BOX 1698 • KENNER, LA 70063 9746

SALES (504) 465-3310

MCDS Document # REV. #1

MSP CODE:

Generator Name: TOOELE ARMY DEPOT
Facility Address: SOUTH AREA
City, State, Zip: TOOELE, UT. 84074
Technical Contact: LYMAN THORPE
Title: ENV. COORDINATER
Telephone NO.: (801) 833-4413 EXT:
Facility EPA ID #: UT5210090002

Bill To: PSC ENVIRONMENTAL
Address: 6348 QUINN DRIVE
City, State, Zip: BATON ROUGE, LA 70817
Telephone #: (801) 486-9100
Company Contact: PHIL BALCER / SLC
Contanier Size: 55 GAL METAL DR.
EPA Waste No.: (D001)(F002)
Generating Process: OUT OF DATE CHEMICALS
Common Name of Waste: WASTE SOLVENT MIXTURE
Rate of Generation: ONE (Quan) (Units) PER TIME (Time Interval)
Volume in Storage: 27 DRUMS (Quan) (Units) IN 55 GAL (Container Size and Type)
Is Waste DOT Hazardous: [X] YES [ ] NO
Proper DOT Shipping Name: WASTE FLAMMABLE LIQUID, NOS
~~Hazard Class~~ UN1993 ~~ID No.~~ FLAMMABLE LIQUID
Transportation Equipment: TRUCK
Placarding: FLAMMABLE

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

Component	%
CARBON TETRACHLORIDE	10 %
111 TRICHLOROETHANE	10 %
DIMETHYL METHYLPHOSPHONATE	5 %
MONO CHLOROBENZENE	1 %
FUEL OIL	74 %
	%
	%

METALS (EP Toxicity Test, mg/1)

Arsenic (As)	NONE SUSPECTED	Silver (Ag)	NONE SUSPECTED
Barium (Ba)	↓	Copper (Cu)	↓
Cadmium (Cd)	↓	Nickel (Ni)	↓
Chromium (cr)	↓	Zinc (Zn)	↓
Lead (Pb)	↓		
Mercury (Hg)	↓		
Selenium (Se)	↓		

PHYSICAL DESCRIPTION

Physical State [X] Liquid [ ] Semi-solid [ ] Solid
Phases/Layering [X] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity [ ] High [ ] Medium [X] Low
Type of Solids [ ] Organic [ ] Inorganic [ ] Mixed
Total Solids (wt. %) 2 Suspended Solids (wt. %) 0
BTU/lb 12,900 % Ash Content <1 % Water (by weight) -0-
Flash Point (°F) 34 Type —
Specific Gravity .99
Boiling Point, (°C) — Freezing Point, (°C) —
Vapor Pressure (mm Hg @ 24°C) —
pH (Avg) 7 (Range) 6 to 8
Total Alkalinity/Acidity (%) —
Odor CARBON TETRACHLORIDE
Color DARK

INORGANICS (mg/1 or ppm)

Total CN	NONE SUSPECTED	Iodine	NONE SUSPECTED
Free CN	↓	Asbestos	↓
Sulfide	↓		
Chloride	↓		
Bisulfite	↓		
Sulfite	↓		
Sulfate	↓		
Phosphate	↓		
Fluorine	↓		
Bromine	↓		
Chlorine	↓		

HAZARDOUS PROPERTIES

[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [X] Ignitable
[ ] Corrosive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other

ORGANICS (mg/1 or ppm)

Endrin	NONE SUSPECTED	Organohalide	NONE SUSPECTED
Methoxychlor	↓	Mercaptans	↓
Toxaphene	↓		
2, 4-D	↓		
2,4,5-T	↓		
Phenol(ics)	↓		
PCBs	↓		
Dioxin	↓		
TOC	↓		

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 12-29-88 GENERATOR'S SIGNATURE: Lyman N Thorpe

MSP FORM 1040 (REV. FEB/88)

PSC

ENVIRONMENTAL MANAGEMENT, INC.

2230 South Main Street, Salt Lake City, Utah 84115, 801-486-9100

DATE: 12-30-88

PLEASE DELIVER THE FOLLOWING PAGE(S) TO:

NAME: Liz Harney

FIRM: MSP

FAX NUMBER: ———

FROM: PSC/TECREP SLC

COMMENTS: Here Are The Revised BYU(2) And Tooele Army Depot (1) Profiles. I would like To Pick up This Material Next Week For A Delivery To You folks in (2) weeks. Please Advise ASAP of Approval Status

ORIGINALS WILL BE IN REGULAR MAIL TODAY

P

TOTAL NUMBER OF PAGES: 5 + THIS COVER LETTER

IF YOU DO NOT RECEIVE ALL THE PAGE(S), PLEASE CALL US AS SOON AS POSSIBLE.

PARTY SENDING: Phil Balcer TELEPHONE: (801)486-9100

FAX NUMBER: (801)486-9115

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

RECYCLE / REUSE

MANIFEST No 902941

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: AZ0120090055 — Manifest Document No.: 01239
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
USDA APHIS
4125 EAST BROADWAY
PHOENIX, ARIZONA 85040

4. Generator's Phone (602) 621-4828

[redacted]

5. Transporter 1 Company Name: HAZCHEM ENVIRONMENTAL SERVICES
6. US EPA ID Number: AZD982483125

[redacted]

7. Transporter 2 Company Name: CHEMICAL DISPOSAL (CTI)
8. US EPA ID Number: AZT050010008

[redacted]

9. Designated Facility Name and Site Address:
MARINE SHALE PROCESSORS, INC.
HIGHWAY 90 EAST
MORGAN CITY, LOUISIANA 70380

10. US EPA ID Number: LAD981057706

[redacted]

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	
a. METHYL BROMIDE, LIQUID POISON B, UN-1062	001	CF	00005	G	[redacted]
b. N/A					[redacted]
c. N/A					[redacted]
d. N/A					[redacted]

[redacted]

15. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PROTECTIVE CLOTHING; GLOVES, EYE WEAR, RESPIRATORY PROTECTION, ETC. LAND DISPOSAL RESTRICTION INFORMATION ATTACHED.
IF UNABLE TO DELIVER, RETURN TO GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
Fred Duane Stewart	Fred Duane Stewart	01 23 89

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Roy D. Truman	Roy D. Truman	01 23 89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
LEE BARBEAU	Lee Barbeau	01 23 89

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
SHELLEY REID	Shelley Reid	02 01 89

MARINE SHALE PROCESSORS, INC.

8900451 MATERIALS CHARACTERIZATION DATA SHEET

MCDS Document # 8900451

P.O. BOX 1098 • KENNER, LA 70063

JAN 17 1988

MSP CODE: ____

Generator Name: USDA APHIS
Facility Address: 4125 E. BROADWAY
City, State, Zip: PHOENIX, AZ 85040
Technical Contact: FRED STEWART
Title: FACILITY DIRECTOR
Telephone NO.: 602 621-4828 Ext. NA
Facility EPA ID #: AZ0120090055

Bill To: HAZCHEM ENVIRONMENTAL SERVICES, INC.
Address: 3855 S. EVANS #405
City, State, Zip: TUCSON, AZ 85714
Telephone #: 602-741-0100
Company Contact: JOHN GUNDLACH
Container Size: 5-GAL POLY CONTAINER W/ABSORBENT
EPA Waste No.: U029
Generating Process: SOIL FUMIGATION
Common Name of Waste: METHYL BROMIDE
Rate of Generation: 38 (Quan.) 20cc (Units) PER ONE TIME (Time Period)
Volume in Storage: NA (Quan. Units) IN NA (Container Size and Type)
Is Waste DOT Hazardous: [X] YES [ ] NO
Proper DOT Shipping Name: METHYL BROMIDE, LIQUID
Hazard Class: POISON B ID No.: UN1062
Transportation Equipment: FLATBED TRUCK
Placarding: POISON

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

Component	%
38 GLASS AMPULS CONTAIN	
ING 20cc METHYL BROMIDE	
PACKAGED IN A PLASTIC BAG	100

METALS (EP Toxicity Test, mg/l)

Arsenic (As) NS (through Selenium); Silver (Ag) NS (through Selenium); Zinc (Zn) NS (through Selenium)

Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se); Copper (Cu), Nickel (Ni)

INORGANICS (mg/l or ppm)

Total CN: NS (through Fluorine); Iodine: NS (through Chlorine); Sulfide (Asbestos column): NS

Free CN, Sulfide, Chloride, Bisulfite, Sulfite, Sulfate, Phosphate, Fluorine

Bromine: 840,000
Chlorine: NS

ORGANICS (mg/l or ppm)

Endrin: NS (through Dioxin); Organohalide: NS (through TOX); Toxaphene (Mercaptans column): NS

Methoxychlor, Toxaphene, 2,4-D, 2,4,5-T, Phenolics, PCBs, Dioxin; Mercaptans

TOX: 130,000

PHYSICAL DESCRIPTION

Physical State: [X] Liquid [ ] Semi-solid [ ] Solid
Phases/Layering: [X] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity: [X] High [ ] Medium [ ] Low
Type of Solids: [ ] Organic [ ] Inorganic [ ] Mixed
Total Solids (wt. %): 0 Suspended Solids (wt. %): 0
BTU/lb: 5000 % Ash Content: 50 % Water (by weight): 0
Flash Point (°F): NONE Type: NA
Specific Gravity: 1.7
Boiling Point (°C): 3.6° Freezing Point (°C): -94°
Vapor Pressure (mm Hg @ 24°C): 1420 mm
pH (Avg): NA (Range): NA to NA
Total Alkalinity/Acidity (%): NA
Odor: CHLOROFORM LIKE
Color: COLORLESS

HAZARDOUS PROPERTIES

[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [ ] Ignitable
[ ] Corrosive [X] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ____

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

WEAR APPROPRIATE SAFETY EQUIPMENT INCLUDING TYVEK, SAFETY GOGGLES/FACE SHIELD, GLOVES AND RESPIRATOR

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 1-11-88 GENERATOR'S SIGNATURE: X Fred Duane Stewart

MSP FORM 1040 (REV 11/88)

DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

RECYCLE / REUSE
MANIFEST No. 901145

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NY 5 6 9 0 3 1 1 9 8 8 9 — Manifest Document No. 0 1 4 1 5
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
U.S. COast Guard- Support Center
Building 902, Governors Island, NY 10004
4. Generator's Phone (212) 668-3417

[redacted]

5. Transporter 1 Company Name: Applied Technology Trans. Inc.
6. US EPA ID Number: N J D 0 9 9 2 8 7 4 8 4
[redacted]

7. Transporter 2 Company Name
8. US EPA ID Number
[redacted]

9. Designated Facility Name and Site Address
MARINE SHALE PROCESSORS, INC.
HIGHWAY 90 EAST
MORGAN CITY, LOUISIANA 70380
10. US EPA ID Number: L A D 9 8 1 0 5 7 7 0 6
[redacted]
Facility's Phone (504) 631-3161

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Waste Paint Flammable Liquid UN1263 RQ(Dool)	0 29	DM	1 0 1 5 0	P	[redacted]
b.					[redacted]
c.					[redacted]
d.					[redacted]

[redacted]
K. Handling Codes for Wastes Listed Above
[redacted]

15. Special Handling Instructions and Additional Information
a) APT/UCG-8809328

IF UNABLE TO DELIVER, RETURN TO GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: JOHN A. CRICK Jr. — Signature: John A. Crick Jr. — Month Day Year: 1 0 0 3 8 9

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: WilliAM HARGROVE — Signature: William Hargrove — Month Day Year: 1 0 1 0 5 8 9

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Ricky J. Cleppell — Signature: Dicky J. Cleppell — Month Day Year: 1 0 1 0 5 8 9

EPA Form 8700-22 (Rev. 9-88) Original-DEQ. Green-Generator's 2nd. Yellow-Discoser. Pink-Transporter. Gold-Generator 1st DEQ FORM HW-1 (R 9/88)

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

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Vol. 13 Exh. 253 Marc U.S. MANIFESTS Cont.
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PI Hearing

MSD007

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

SALES (504) 465-3310

MCDS Document #

NOV 23 1988

MSP CODE: ______

8809328

#1 Generator Name: US Coast Guard Support Center
Facility Address: Bldg 902
City, State, Zip: Governors Island NY 10004
Technical Contact: CWO John Crick
Title: CWO
Telephone NO. (212) 668-3417 EXT: ______
Facility EPA ID #: NY5690319889

#6 Bill To: Aptec Inc, P.O. Box 1726 Toms River NJ 08754
Company Contact: Joseph Birmingham
Container Size: 55 gallon
EPA Waste No: D001
Generating Process: discarded Product
Common Name of Waste: Waste Paint
Rate of Generation: 20 (Quan) 55gal (Unit) PER year (Time Interval)
Volume in Storage: 20 (Quan) 55gal (Unit) IN 55gal Steel 17-H (Container Size and Type)
Is Waste DOT Hazardous: [X] YES [ ] NO
Proper DOT Shipping Name: Waste Paint
Hazard Class: Flammable Liquid ID No. UN1263
Transportation Equipment: Box Van
Placarding: Flammable

#2 CHEMICAL COMPOSITION (No Trade Name)
(Totals must add up to 100%)

One gallon Cans in 55 gallon 17-H drums.	%
Base	%
Paint (Xylene, Toluene)	90 %
metal cans	10 %
	%
	%
	%

#7 PHYSICAL DESCRIPTION
Physical State: [X] Liquid [ ] Semi-solid [ ] Solid
Phases/Layering: [X] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity: [ ] High [X] Medium → [X] Low
Type of Solids: [X] Organic [X] Inorganic [ ] Mixed
Total Solids (wt. %) 25 Suspended Solids (wt. %) 15
BTU/lb 10,100 % Ash Content 5 % Water (by weight) <1
Flash Point (°F) ≤80 Type ______
Specific Gravity 1.1
Boiling Point, (°C) - Freezing Point, (°C) -
Vapor Pressure (mm Hg @ 24°C) ______
pH (Avg) organic (Range) ______ to -
Total Alkalinity/Acidity (%) 0
Odor: Paint / Solvent
Color: Varies

#3 METALS (EP Toxicity Test, mg/l)

Arsenic (As)	None	Silver (Ag)	None
Barium (Ba)	↓	Copper (Cu)	↓
Cadmium (Cd)	↓	Nickel (Ni)	↓
Chromium (Cr)	↓	Zinc (Zn)	↓
Lead (Pb)	↓		
Mercury (Hg)	↓		
Selenium (Se)	↓		

#4 INORGANICS (mg/l or ppm)

Total CN	None	Iodine	None
Free CN	↓	Asbestos	None
Sulfide	↓		
Chloride	↓		
Bisulfite	↓		
Sulfite	↓		
Sulfate	↓		
Phosphate	↓		
Fluorine	↓		
Bromine	↓		
Chlorine	↓		

#8 HAZARDOUS PROPERTIES
[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [X] Ignitable
[ ] Corrosive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ______

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:

#5 ORGANICS (mg/l or ppm)

Endrin	None	Organohalide	None
Methoxychlor	↓	Mercaptans	None.
Toxaphene	↓		
2,4-D	↓		
2,4,5-T	↓		
Phenolic(s)	↓		
PCBs	↓		
Dioxin	↓		
TOC	↓		

MSP-68

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 11/15/88 GENERATOR'S SIGNATURE: John Crick, CWO

MSP FORM 1048 (REV. JUNE 87)

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

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Vol. 13 Exh. 253 Mace US Manifests Cont.

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MSD007

0848

APTEC, INC.

Subsidiary of American Technological Industries, Inc.

25 South Shore Drive
P.O. Box 1726
Toms River, NJ 08754-0597
(201) 255-5900

November 16, 1988

Ms. Tammie Matanic
Marine Shale Processors, Inc.
P.O. Box 1698
Kenner, LA 70063

Dear Tammie:

Enclosed please find generator waste analysis form coded MSP-68 for waste generated by U. S. Coast Guard Support Center, Governors Island, NY.

Please review this data and inform me if this material will be acceptable for incineration at Marine Shale.

If you have any questions, please do not hesitate to call.

Very truly yours,
APTEC, INC.

Joseph Birmingham
Technical Sales and Service Director

JB:ds
Enclosures

Specialists in Hazardous Waste Management

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
HAZARDOUS WASTE DIVISION
P.O. BOX 44307
BATON ROUGE, LOUISIANA 70804

RECYCLE/REUSE

MANIFEST No. 905802

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved, OMB No. 2050-0039, Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
C A 6 1 1 7 0 1 2 8 1 2 0 8 1 0 0 1 3			

3. Generator's Name and Mailing Address
EL TORO MCAS (1JG) ENVIRONMENTAL DEPARTMENT
BUILD. 368 EL TORO, CA 92709-5001

4. Generator's Phone (714) 726-6606

5. Transporter 1 Company Name: AMERICAN ENVIRONMENTAL MGMT Co.
6. US EPA ID Number: CAD980888141813

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
MARINE SHALE PROCESSORS, INC.
HIGHWAY 90 EAST
MORGAN CITY, LOUISIANA 70380
10. US EPA ID Number: L A D 9 8 1 0 5 7 7 0 6

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.
a. WASTE PAINT RELATED MATERIAL RQ (D001, D007, D008, F002, F003, F005) FLAMMABLE LIQUID NA1263	0 1 8	D M	0 0 1 8 2 5	G
b. WASTE PAINT RELATED MATERIAL RQ (D001, D006, D007 D008) COMBUSTIBLE LIQUID ~~NA9189~~ NA1263	0 0 8	D M	0 0 1 1 5 0	G
c. WASTE FLAMMABLE SOLID NOS (F002, F003, F005) FLAMMABLE SOLID UN1325	0 0 3	D M	0 1 8 0 0	P
d. HAZARDOUS WASTE SOLID, NOS (CA REGULATED) ORM-E NA9189	0 0 3	D M	0 1 5 0 0	P

GENERATOR

15. Special Handling Instructions and Additional Information
D) DRUM # D1-D3 EDY/MRN: 8809430 W.O.# [redacted]
GLOVES & GOGGLES DISPOSAL BILLING C.O.D.
IF UNABLE TO DELIVER, RETURN TO GENERATOR CONTRACT # N62474-87-C-0932 (OPTION = 1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. I also certify that the waste is not a hazardous waste as defined in 40 CFR 261.5 if I am a conditionally exempt small quantity generator.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	10	30	89

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Randall A. Edmunds	[illegible]	10	30	89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
A - Waste numbers are D001-R, D007-R, D008-R, F002-R, F003-R and F005-R

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year
Gail Leonard	Gail Leonard	10	30	89

7:50 am

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

SALES (504) 465-3310

MCDS Document # ________

NOV 29 1988

MSP CODE: ________

8809427 El Toro

(213) 833-6021

#1

Generator Name: Marine Corps Air Station
Facility Address: Bldg 368
El Toro MCAS
Santa Ana CA 92709-5001
City, State, Zip
Technical Contact: Sharon Lin
Title: Environmental Manager
Telephone NO.: (714) 651-6606 EXT:
Facility EPA ID #: CA6170023203

#6

Bill To: Environmental Dynamics Inc
Company Contact: Jeff R Bowman
Container Size: 20 gal, 30 gal, 55 gal overpack
EPA Waste No.: N/A
Generating Process: Off Spec
Common Name of Waste: Paint Strips (Road)
Rate of Generation: 2 (Quan) Dm (Unit) PER Mo (Day, Month)
Volume in Storage: 8 (Quan) Dms (Units) IN 20, 30 gal (Container Size and Type)
Is Waste DOT Hazardous: [X] YES [ ] NO
Proper DOT Shipping Name: Paint Related Material
Hazard Class: Comb ID No.: NA 1263
Transportation Equipment: Flat Bed / Rolloff
Placarding: ________

#2 CHEMICAL COMPOSITION (No Trade Name)
(Totals must add up to 100%)

Off Spec Paint	%
Oil Base Road Strips Paint	100 %

#3 METALS (EP Toxicity Test, mg/1)

Arsenic (As)	0	Silver (Ag)	0
Barium (Ba)	0	Copper (Cu)	0
Cadmium (Cd)	0	Nickel (Ni)	0
Chromium (cr)	0	Zinc (Zn)	0
Lead (Pb)	<5		
Mercury (Hg)	0		
Selenium (Se)	0		

#4 INORGANICS (mg/1 or ppm)

Total CN	0	Iodine	0
Free CN	0	Asbestos	0
Sulfide	0		
Chloride	0		
Bisulfite	0		
Sulfite	0		
Sulfate	0		
Phosphate	0		
Fluorine	0		
Bromine	0		
Chlorine	0		

#5 ORGANICS (mg/1 or ppm)

Endrin	0	Organohalide	0
Methoxychlor	0	Mercaptans	0
Toxaphene	0		
2,4-D	0		
2,4,5-T	0		
Phenolic(s)	0		
PCBs	0		
Dioxin	0		
TOC	0		

#7 PHYSICAL DESCRIPTION

Physical State: [ ] Liquid [X] Semi-solid [X] Solid
Phases/Layering: [X] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity: [X] High [ ] Medium [ ] Low
Type of Solids: [X] Organic [ ] Inorganic [ ] Mixed
Total Solids (wt. %): 50-90 Suspended Solids (wt. %): 15
BTU/lb: 3000 % Ash Content: 5 % Water (by weight): <1
Flash Point (°F): >150 Type: ________
Specific Gravity: <8
Boiling Point, (°C): 0 Freezing Point, (°C): 0
Vapor Pressure (mm Hg @ 24°C): 0
pH (Avg): 7 (Range) ________ to ________
Total Alkalinity/Acidity (%): 0
Odor: Mild
Color: yellow / wt

#8 HAZARDOUS PROPERTIES

[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [ ] Ignitable
[ ] Corrosive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ________

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:
Gloves + Goggles - May Contain Lead Pigments

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 11-15-88 GENERATOR'S SIGNATURE: Sharon Lin

MSP FORM 5808 (REV. JUNE 87)

DEC 13 1988

7

ENVIRONMENTAL DYNAMICS, INC.

1931 N. GAFFEY SUITE A • SAN PEDRO, CALIFORNIA • 90731 • (213) 833-6021

December 9, 1988

Marine Shale Processors
110 James Drive West
Suite 120
St. Rose LA 70087

Attn: Liz Harney

Dear Ms. Harney:

The following Profiles have been amended as follows;

8809430 - BTU value = 8000
EPA waste code = Non regulated/State regulated
Physical state = Solid

8809425 - EPA waste codes - F002, F003, F005

8809427 - Metals concentration
Lead = 18.0 mg/kg
Zinc = 10.0 mg/kg
Chrome = 1.5 mg/kg
Cadmium = 2.8 mg/kg

EPA waste codes = D006, D007, D008

If you require further information or clarification please let me know.

Thank you,

Jeff R. Bowman, REA
Project Manager

December 13, 1988

Marine Shale Processors
110 James Drive West
Suite 120
St. Rose LA 70087

Attn: Liz Harney

Dear Ms. Harney:

The following Profiles have been amended as follows;

8809430 - BTU value = 8000
EPA waste code = Non regulated/State regulated
Physical state = Solid

8809425 - EPA waste codes - F002, F003, F005

8809427 - Metals concentration
Lead = 19.0 mg/kg
Zinc = 10.0 mg/kg
Chrome = 1.5 mg/kg
Cadmium = 2.8 mg/kg

EPA waste codes = D006, D007, D008

8809774 - EPA Waste codes - F002, F003, F005
Waste contains Acetone, MEK, Methylene Chloride, Tolune, and Xylene.
Ash = 70% - 90%
BTU = 500 - 1000

8809773 - EPA Waste codes - F002, F003, F005
Waste contains Acetone, MEK, Methylene Chloride, Tolune, and Xylene.
BTU = 6500 - 8000

If you require further information or clarification please let me know.

Thank you,

Sharon Lien ENVIRONMENTAL PROTECTION SPECIALIST
Sharon Lien
for Environmental Director
El Toro Marine Corps Air Station

DEC 09 1988

ENVIRONMENTAL DYNAMICS, INC.

1931 N. GAFFEY SUITE A • SAN PEDRO, CALIFORNIA • 90731 • (213) 833-6021

December 5, 1988

Marine Shale Processors
110 James Drive West
Suite 120
St. Rose LA 70087

Attn: Liz Harney

Dear Ms. Harney:

The following Profiles have been amended as follows;

8809430 - BTU value = 8000
EPA waste code = Non regulated/State regulated
Physical state = Solid

8809425 - EPA waste codes - F002, F003, F005

8809427 - Metals concentration
Lead = 19.0 mg/kg
Zinc = 10.0 mg/kg
Chrome = 1.5 mg/kg
Cadmium = 2.8 mg/kg

EPA waste codes = F006, F007, F008

If you require further information or clarification please let me know.

Thank you,

Jeff R. Bowman, REA
Project Manager

FEB 08 1989

UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION
EL TORO (SANTA ANA), CALIFORNIA 92709-5001

IN REPLY REFER TO:
6280
1JG
FEB 2 1989

Ms. Liz Harney
Marine Shale Processors, Inc.
Highway 90 East
Morgan City, LA 70380

Dear Ms Harney:

As requested, the following profiles are clarified for manifest #905802:

1. Profile No. 8809427 on line item b, EPA waste code D001 should be included.

2. Profile No. 8809428 on line c, EPA waste code F005 should be included.

If there are any questions, please contact me at (714) 726-2821.

Sincerely,

Michael W. Rehor

MICHAEL W. REHOR, ENS, CEC, USN
Director, Environmental Division

Copy to:
Environmental Dynamics

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

US v MSP
Rec'd from MSP
Vol. 13 Exh. 253 Mace U.S. MANIFESTS
Cont.
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PI Hearing

MSD007

0847

RECERTIFICATION OF MATERIAL CHARACTERIZATION DATA SHEET

RECEIVED NOV 13 1989

MSP Approval Code

EPY /MRN /88091277/ /

Instructions: A copy of the M.C.D.S. to be recertified is attached to this Recertification Form. We ask that you complete the remainder of this form and have it signed by an authorized technical contact.

Return this form with any attachments to: MARINE SHALE PROCESSORS, INC.
Post Office Box 1698
Kenner, LA 70063
Attention: Technical Review

A. GENERAL INFORMATION

Generator Name: MARINE CORPS AIR STATION EL TU

Telephone: (714) 651-6606 x.0000

Facility Address: 1 J C
BLDG. 368
SANTA ANA, CA 92709-5001

USEPA ID: CA6170023203
CA 917009 0022
*Two Facilities

Name of Waste: PAINT STRIPE

Generating Process: _____

Technical Contact: ~~MS. SHARON LEIN~~ Mike Reiter / Nancy Yates Title: ENV. MGR.

B. CHANGES OR ADDITIONS SINCE LAST MCDS PREPARATION

1. Have you obtained any laboratory analysis of this waste? *(If yes, attach results)* ☐ yes ☒ no
2. Have you changed the raw materials used in the waste generating process? ☐ yes ☒ no
3. Have you changed the waste generating process itself? ☐ yes ☒ no
4. Are you aware of any facts or circumstances which have, or reasonably could have, altered the physical or hazardous characteristics, or chemical composition of the waste? ☐ yes ☒ no
5. Are you aware of any human health effects of exposure to the waste not previously described? ☐ yes ☒ no
6. If you answered "yes" to questions 2, 3, 4, or 5, please provide details below:

IF THERE HAVE BEEN ANY SUBSTANTIAL CHANGES, A NEW MCDS MUST BE SUBMITTED.

SHIPPING INFORMATION

Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☐ Drum (type/size) 17-H 55,30

Anticipated Volume: 300 Gals. _____ Cubic Yds. _____ Other _____

Per: ☐ One Time ☐ Week ☒ Month ☐ Quarter ☐ Year

RECERTIFICATION

I am an employee of the generator authorized to sign this Recertification. The information provided in the recertified waste profile sheet attached hereto, and the information supplied above, are complete, true and correct.

Name: JEFF R BOWMAN

Signature: _____

Title: OPERATIONS MANAGER

Date: 11/7/89

MSP Form 1040 – R (October 1987)

Date November 6, 1989

Company El Toro Marine Corps Air Station

Job number C101-14

Environmental Dynamics, Inc. has been contracted by the above named firm and is authorized to complete and sign disposal site profiles and related materials.

by Nancy Yates

Name NANCY YATES

Title ENVIRONMENTAL PROTECTION SPECIALIST

or is based on my inquiries of those individuals responsible for obtaining the information.

Nancy Yates
Signature

ENVIRONMENTAL PROTECTION SPECIALIST 11/06/89
Title Date

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

SALES (504) 465-3310

MCDS Document # 8809425 El Toro NOV 29 1988

MSP CODE:

(213) 833-6021

#1 Generator Name: Marine Corps Air Station
Facility Address: Bldg 368
El Toro MCAS
Santa Ana CA 92709-5001
City, State, Zip:
Technical Contact: Sharon Lein
Title: Environmental Manager
Telephone NO. (714) 651-6606 EXT:
Facility EPA ID #: CA6170023203

#6 Bill To: Environmental Dynamics Inc
Company Contact: Jeff R Bowman
Container Size: 30 gal, 55 gal
EPA Waste No.: D001 D007 D008
Generating Process: Off Spec or Spent
Common Name of Waste: Paint and Paint Thinners
Rate of Generation: 15 DMS PER 90 Days
Volume in Storage: 15 DMS IN 30 and 55 gal
Is Waste DOT Hazardous [X] YES [ ] NO
Proper DOT Shipping Name: Paint Related Material
Hazard Class: Flam ID No. NA1263
Transportation Equipment: Flat Bed
Placarding: Flammable

#2 CHEMICAL COMPOSITION (No Trade Name)
(Totals must add up to 100%)

Component	%
Latex Paint	25 %
Oil Base Paint	40 %
Lead Chrome Zinc	1 %
Acetone	15 %
MEK	15 %
Meth Chloride	4 %

#3 METALS (EP Toxicity Test, mg/l)

Arsenic (As)	0	Silver (Ag)	0
Barium (Ba)	0	Copper (Cu)	<.5
Cadmium (Cd)	<.1	Nickel (Ni)	<1
Chromium (Cr)	<20	Zinc (Zn)	<16
Lead (Pb)	<20		
Mercury (Hg)	0		
Selenium (Se)	0		

#4 INORGANICS (mg/l or ppm)

Total CN	0	Iodine	0
Free CN	0	Asbestos	0
Sulfide	0		
Chloride	0		
Bisulfite	0		
Sulfite	0		
Sulfate	0		
Phosphate	0		
Fluorine	0		
Bromine	0		
Chlorine	0		

#5 ORGANICS (mg/l or ppm)

Endrin	0	Organohalide	0
Methoxychlor	0	Mercaptans	0
Toxaphene	0		
2,4-D	0		
2,4,5-T	0		
Phenolics	0		
PCBs	0		
Dioxin	0		
TOC	0		

#7 PHYSICAL DESCRIPTION
Physical State * [X] Liquid [X] Semi-solid [ ] Solid
Phases/Layering [ ] Uni-Layer [X] Bilayer [ ] Multilayer
Viscosity [ ] High [X] Medium [ ] Low
Type of Solids [X] Organic [X] Inorganic [ ] Mixed
Total Solids (wt. %) 15-85 Suspended Solids (wt. %) 20-90
BTU/lb 3000-5000 % Ash Content 15 % Water (by weight) 5
Flash Point (°F) 75-100 Type
Specific Gravity .8
Boiling Point (°C) N/A Freezing Point (°C) N/A
Vapor Pressure (mm Hg @ 24°C) N/A
pH (Avg) 7 (Range) - to -
Total Alkalinity/Acidity (%) N/A
Odor: Strong - Solvent
Color: Mixed

#8 HAZARDOUS PROPERTIES
[ ] Water Reactive [ ] Reactive [ ] NONE
[ ] Shock Sensitive [ ] Pyrophoric [ ] Explosive
[ ] Radioactive [ ] Pesticide Residuals [ ] Polymerizable
[ ] Corrosive [ ] Toxic Vapor [X] Ignitable
[ ] Biological [ ] Etiological [ ] Pathogen
[ ] Other: Metals

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: Gloves, Goggles Resp and Pro-Cl

*Material May Be Sludge and Nonpumpable

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE: 11-9-88 GENERATOR'S SIGNATURE: Sharon Lein

MSP FORM (REV. JUNE 85)

US v MSP
Rec'd from MSP
Vol. 13 Exh. 253 Mace U.S. MANIFESTS Cont.
Releasable
PI Hearing

MSD007

DEC 13 1988

ENVIRONMENTAL DYNAMICS, INC.
1931 N. GAFFEY SUITE A • SAN PEDRO, CALIFORNIA • 90731 • (213) 833-6021

December 9. 1988

Marine Shale Processors
110 James Drive West
Suite 120
St. Rose LA 70087

Attn: Liz Harney

Dear Ms. Harney:

The following Profiles have been amended as follows;

8809430 - BTU value = 8000
EPA waste code = Non regulated/State regulated
Physical state = Solid

8809425 - EPA waste codes - F002, F003, F005

8809427 - Metals concentration
Lead = 19.0 mg/kg
Zinc = 10.0 mg/kg
Chrome = 1.5 mg/kg
Cadmiun = 2.8 mg/kg

EPA waste codes = D006, D007, D008

If you require further information or clarification please let me know.

Thank you,

Jeff R. Bowman, REA
Project Manager

December 13. 1988

Marine Shale Processors
110 James Drive West
Suite 120
St. Rose LA 70087

Attn: Liz Harney

Dear Ms. Harney:

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Cadmium = 2.8 mg/kg

EPA waste codes = D006, D007, D008

8809774 - EPA Waste codes - F002, F003, F005
Waste contains Acetone, MEK, Methylene Chloride, Tolune, and Xylene.
Ash = 70% - 90%
BTU = 500 - 1000

8809773 - EPA Waste codes - F002, F003, F005
Waste contains Acetone, MEK, Methylene Chloride, Tolune, and Xylene.
BTU = 6500 - 8000

If you require further information or clarification please let me know.

Thank you,

Sharon Lien ENVIRONMENTAL PROTECTION SPECIALIST
Sharon Lien
for Environmental Director
El Toro Marine Corps Air Station

ENVIRONMENTAL DYNAMICS, INC.
1931 N. GAFFEY SUITE A • SAN PEDRO, CALIFORNIA • 90731 • (213) 833-6021

December 5. 1988

Marine Shale Processors
110 James Drive West
Suite 120
St. Rose LA 70087

Attn: Liz Harney

Dear Ms. Harney:

The following Profiles have been amended as follows;

8809430 - BTU value = 8000
EPA waste code = Non regulated/State regulated
Physical state = Solid

8809425 - EPA waste codes - F002, F003, F005

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Zinc = 10.0 mg/kg
Chrome = 1.5 mg/kg
Cadmium = 2.8 mg/kg

EPA waste codes = F006, F007, F008

If you require further information or clarification please let me know.

Thank you,

Jeff R. Bowman, REA
Project Manager

RECERTIFICATION OF MATERIAL CHARACTERIZATION DATA SHEET

RECEIVED NOV 1 3 1989

MSP Approval Code

EDY /MRN /88094251 /

Instructions: A copy of the M.C.D.S. to be recertified is attached to this Recertification Form. We ask that you complete the remainder of this form and have it signed by an authorized technical contact.

Return this form with any attachments to: MARINE SHALE PROCESSORS, INC.
Post Office Box 1698
Kenner, LA 70063
Attention: Technical Review

A. GENERAL INFORMATION

Generator Name: MARINE CORPS AIR STATION EL TU

Telephone: (714) 651-6606 x.0000

Facility Address: 1 J G
BLDG. 368
SANTA ANA, CA 92709-5001

USEPA ID: CA6170023203
CA9170090022
* Two Facilities

Name of Waste: PAINT AND PAINT THINNERS

Generating Process: ________

Technical Contact: ~~MS. SHARON LEIN~~ Mike Rotter/Nancy Yiotis

Title: ENV. MGR.

B. CHANGES OR ADDITIONS SINCE LAST MCDS PREPARATION

1. Have you obtained any laboratory analysis of this waste? *(If yes, attach results)* .... ☐ yes ☒ no
2. Have you changed the raw materials used in the waste generating process? .... ☐ yes ☒ no
3. Have you changed the waste generating process itself? .... ☐ yes ☒ no
4. Are you aware of any facts or circumstances which have, or reasonably could have, altered the physical or hazardous characteristics, or chemical composition of the waste? .... ☐ yes ☒ no
5. Are you aware of any human health effects of exposure to the waste not previously described? .... ☐ yes ☒ no
6. If you answered "yes" to questions 2, 3, 4, or 5, please provide details below:

IF THERE HAVE BEEN ANY SUBSTANTIAL CHANGES, A NEW MCDS MUST BE SUBMITTED.

SHIPPING INFORMATION

Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum (type/size) 17-H 55, 30, 85

Anticipated Volume: 1000 Gals. ____ Cubic Yds. ____ Other ____

Per: ☐ One Time ☐ Week ☒ Month ☐ Quarter ☐ Year

RECERTIFICATION

I am an employee of the generator authorized to sign this Recertification. The information provided in the recertified waste profile sheet attached hereto, and the information supplied above, are complete, true and correct.

Name: Jeff R Bowman

Signature: [signature]

Title: Operations Manager

Date: 11/9/89

MSP Form 1040 – R (October 1987)

Date November 6, 1989

Company El Toro Marine Corps Air Station

Job number C101-14

Environmental Dynamics, Inc. has been contracted by the above named firm and is authorized to complete and sign disposal site profiles and related materials.

By *Nancy Yates*

Name NANCY YATES

Title ENVIRONMENTAL PROTECTION SPECIALIST

br based on my inquiries of those individuals responsible for obtaining the information.

Nancy Yates
Signature

ENVIRONMENTAL PROTECTION SPECIALIST
Title

11/06/89
Date

MARINE SHALE PROCESSORS, INC.

MATERIALS CHARACTERIZATION DATA SHEET

MCDS Document # 3809428 — NOV 29 1988 — SALES (504) 465-3310

MSP CODE: ______

#1 Generator Name: MARINE Corps Air Station El TORO
Facility Address: Bldg 368
EL TORO MCAS
Santa ANA CA 92709-5001
City, State, Zip
Technical Contact: SHARON Lein
Title: ENVIRONMENTAL MANAGER
Telephone NO. (714) 651-6606 (X):
Facility EPA ID # CA6170023208

#6 Bill To: ENVIRONMENTAL DYNAMICS INC (213) 833-6021
Company Contact: JEFF R BOWMAN
Container Size: 20gal, 30gal, 55 gal 17-H Metal
EPA Waste No. D001, F002, F003
Generating Process: Spill Clean-up
Common Name of Waste: Spill Clean-up
Rate of Generation: 2 (Quan) DM (Unit) PER MO.
Volume in Storage: 5 (Quan) DMS (Unit) IN 30/55 gal (Container Size and Type)
Is Waste DOT Hazardous [X] YES [ ] NO
Proper DOT Shipping Name: Flammable Solid, NOS
Hazard Class: Flam Sol ID No. UN1325
Transportation Equipment: Flat Bed / Roll off
Placarding: Flam Solid

#2 CHEMICAL COMPOSITION (No Trade Name)
(Totals must add up to 100%)

Dirt	50-95 %
Speedy Dry (Absorbent)	5-45 %
Debris	<1 %
Paint Waste (Latex/oil)	<5 %
oil / Hyd oil	<5 %
Solvents	<5 %
	%

#3 METALS (EP Toxicity Test, mg/l)

Arsenic (As)	Ø	Silver (Ag)	Ø
Barium (Ba)	Ø	Copper (Cu)	Ø
Cadmium (Cd)	Ø	Nickel (Ni)	Ø
Chromium (Cr)	<5	Zinc (Zn)	<1
Lead (Pb)	<5		
Mercury (Hg)	Ø		
Selenium (Se)	Ø		

#4 INORGANICS (mg/l or ppm)

Total CN	Ø	Iodine	Ø
Free CN	Ø	Asbestos	Ø
Sulfide	Ø		
Chloride	Ø		
Bisulfite	Ø		
Sulfite	Ø		
Sulfate	Ø		
Phosphate	Ø		
Fluorine	Ø		
Bromine	Ø		
Chlorine	Ø		

#5 ORGANICS (mg/l or ppm)

Endrin	Ø	Organohalide	Ø
Methoxychlor	Ø	Mercaptans	Ø
Toxaphene	Ø		
2,4-D	Ø	METH CHL	<10,000
2,4,5-T	Ø	ACETONE	<10,000
Phenolics	Ø	MEK	<10,000
PCBs	Ø		
Dioxin	Ø		
TOC	Ø		

#7 PHYSICAL DESCRIPTION
Physical State [ ] Liquid [X] Semi-solid [X] Solid
Phases/Layering [X] Uni-Layer [ ] Bilayer [ ] Multilayer
Viscosity [X] High [ ] Medium [ ] Low
Type of Solids [X] Organic [X] Inorganic [X] Mixed
Total Solids (wt. %) 85-100 Suspended Solids (wt. %) N/A
BTU/lb 3-5000 % Ash Content 25 % Water (by weight) <5
Flash Point (°F) 75-100 Type
Specific Gravity N/A
Boiling Point (°C) N/A Freezing Point (°C) N/A
Vapor Pressure (mm Hg @ 24°C) N/A
pH (Avg) 7 (Range) to
Total Alkalinity/Acidity (%) N/A
Odor: Strong Solvent
Color: Mixed

#8 HAZARDOUS PROPERTIES
[ ] NONE
[ ] Water Reactive [ ] Reactive [ ] Explosive
[ ] Shock Sensitive [ ] Pyrophoric [ ] Polymerizable
[ ] Radioactive [ ] Pesticide Residuals [X] Ignitable
[ ] Corrosive [ ] Toxic Vapor [ ] Pathogen
[ ] Biological [ ] Etiological
[ ] Other ______

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES:
Gloves Goggles Resp - ORG. Resp

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SKETCHES, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

(CERTIFICAT)ION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to (t)hat no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed the materials tested are representative of all the materials subject to the contract.

1-15-88 GENERATOR'S SIGNATURE: Sharon [signature]

NOTICE: If the film image is less clear than this notice, it is due to the quality of the document being filmed

US v MSP Rec'd from MSP Vol 13 Exh. 253 Pace US MANIFESTS Cont.

Releasable PI Hearing

MSD0007

FEB 08 1989

UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION
EL TORO (SANTA ANA), CALIFORNIA 92709-5001

IN REPLY REFER TO:
6280
1JG
FEB 2 1989

Ms. Liz Harney
Marine Shale Processors, Inc.
Highway 90 East
Morgan City, LA 70380

Dear Ms Harney:

As requested, the following profiles are clarified for manifest #905802:

1. Profile No. 8809427 on line item b, EPA waste code D001 should be included.

2. Profile No. 8809428 on line c, EPA waste code F005 should be included.

If there are any questions, please contact me at (714) 726-2821.

Sincerely,

Michael W. Rehor
MICHAEL W. REHOR, ENS, CEC, USN
Director, Environmental Division

Copy to:
Environmental Dynamics

P:

RECERTIFICATION OF MATERIAL CHARACTERIZATION DATA SHEET

MSP Approval Code

RECEIVED NOV 13 1989

EDY /MRN /88094201 /

Instructions: A copy of the M.C.D.S. to be recertified is attached to this Recertification Form. We ask that you complete the remainder of this form and have it signed by an authorized technical contact.

Return this form with any attachments to: MARINE SHALE PROCESSORS, INC.
Post Office Box 1698
Kenner, LA 70063
Attention: Technical Review

A. GENERAL INFORMATION

Generator Name: MARINE CORPS AIR STATION EL TU

Telephone: (714) 651-6606 x.0000

Facility Address: 1 J C
BLDG. 368
SANTA ANA, CA 92709-5001

USEPA ID: CA6170023203
CA9170090022
Two Facilities

Name of Waste: SPILL CLEAN UP

Generating Process:

Technical Contact: ~~MS SHARON LETH~~ Mike Bellar / Nancy Yates

Title: ENV. MGR.

B. CHANGES OR ADDITIONS SINCE LAST MCDS PREPARATION

1. Have you obtained any laboratory analysis of this waste? *(If yes, attach results)* ☒ yes ☐ no
2. Have you changed the raw materials used in the waste generating process? ☐ yes ☒ no
3. Have you changed the waste generating process itself? ☐ yes ☒ no
4. Are you aware of any facts or circumstances which have, or reasonably could have, altered the physical or hazardous characteristics, or chemical composition of the waste? ☐ yes ☒ no
5. Are you aware of any human health effects of exposure to the waste not previously described? ☐ yes ☒ no
6. If you answered "yes" to questions 2, 3, 4, or 5, please provide details below:

IF THERE HAVE BEEN ANY SUBSTANTIAL CHANGES, A NEW MCDS MUST BE SUBMITTED.

SHIPPING INFORMATION

Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum (type/size) 17-H 55, 85, 1cy Box

Anticipated Volume: Gals. 10 Cubic Yds. Other

Per: ☐ One Time ☐ Week ☒ Month ☐ Quarter ☐ Year

RECERTIFICATION

I am an employee of the generator authorized to sign this Recertification. The information provided in the recertified waste profile sheet attached hereto, and the information supplied above, are complete, true and correct.

Name: Jeff R Bowman

Signature: [signature]

Title: Operations Manager

Date: 11/7/89

MSP Form 1040 - R (October 1987)

Date November 6, 1989

Company El Toro Marine Corps Air Station

Job number C101-14

Environmental Dynamics, Inc. has been contracted by the above named firm and is authorized to complete and sign disposal site profiles and related materials.

by Nancy Yates

Name NANCY YATES

Title ENVIRONMENTAL PROTECTION SPECIALIST

or is based on my inquiries of those individuals responsible for obtaining the information.

Nancy Yates
Signature

ENVIRONMENTAL PROTECTION SPECIALIST 11/06/89
Title Date