

Material Safety Data Sheet

For Coatings, Resins and Related Materials

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals

24 Hour Emergency: 1-800-123-4567 CHEMTREC: 1-800-424-9300

National Response in Canada CANUTEC: 613-996-6666

Outside U.S. and Canada Chemtrec: 202-483-7616

Section 1 - Chemical Product / Company Information

Product Name:	MIL-PRF-85285E-TYPE I-CLASS H-36320 BASE	Revision Date:	03/09/2012
Identification Number:	03GY287	Print Date:	
Product Use/Class:	POLYURETHANE COATING BASE COMPONENT/MIL-PRF-85285E, TYPE I, CLASS H	NSN:	
Manufacturer:	Deft, Inc. (CAGE CODE 33461) 17451 Von Karman Ave Irvine, Ca. 92614	Information Phone:	(949) 474-0400
		Emergency Phone:	(800) 424-9300

Section 2 - Hazards Identification

*** Emergency Overview ***: Flammable liquid and vapors. Harmful by inhalation, in contact with skin, and if swallowed. May cause burns to the skin. Contact with eyes or skin causes irritation.

Effects Of Overexposure - Eye Contact: Exposure to liquid, aerosol, or vapors may cause irritation, tearing, redness, and swelling accompanied by a stinging sensation. Exposure may cause conjunctivitis. Contact with eyes may cause irritation.

Effects Of Overexposure - Skin Contact: Direct skin contact may cause irritation. Symptoms may include swelling, burning, redness, and rash. Prolonged or repeated skin contact may cause dermatitis, drying, and defatting due to the solvent properties. Exposure may cause skin burns.

Effects Of Overexposure - Inhalation: Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes) & acute nervous system depression characterized by the following progressive steps: headache, nausea, weakness, dizziness, staggering gait, confusion, fatigue, drowsiness, unconsciousness, or coma. Exposure may cause difficult breathing, shortness of breath, coughing, drowsiness, or irreversible damage to the nervous system and brain. Exposure may cause pulmonary edema. Inhalation may cause headaches, burning sensation, shortness of breath, coughing, difficult breathing, and loss of consciousness. Exposure to high concentrations or overexposure to one or more components may cause respiratory depression or failure, difficult breathing, chest constriction, loss of consciousness, or death.

Effects Of Overexposure - Ingestion: Ingestion may cause gastrointestinal irritation, abdominal pain, nausea, vomiting, and diarrhea. May result in possible corrosive action in the mouth, stomach tissue, and digestive tract. Vomiting may cause aspiration of the solvent, resulting in chemical pneumonitis. The gastrointestinal tract lining may be damaged through the ingestion of a component.

Effects Of Overexposure - Chronic Hazards: Prolonged contact will cause drying and cracking of the skin, due to defatting action. Skin sensitization, asthma, or other allergic responses may develop. May cause muscle weakness and loss of coordination. Symptoms of overexposure may occur for up to 48 hours after the original exposure occurred. Overexposure to ETHYL BENZENE, a component of this formulation, has been shown to cause damage to the liver and kidneys in tests in laboratory animals. Ethylbenzene, a component of this formulation, has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain. PRODUCT CONTAINS TITANIUM DIOXIDE PIGMENT, WHICH HAS AN IARC CLASSIFICATION OF 2B POSSIBLY CARCINOGENIC TO HUMANS.

Primary Route(s) Of Entry: Skin Contact, Inhalation, Eye Contact

Section 3 - Composition / Information On Ingredients

Component	CAS Number	Weight % Reporting Ranges
METHYL n-AMYL KETONE	110-43-0	10-30
TITANIUM DIOXIDE	13463-67-7	7-13
n-BUTYL ACETATE	123-86-4	5-10

ETHYL 3-ETHOXYPROPIONATE	763-69-9	5-10
BENZENE, 1-CHLORO-4 TRIFLUOROMETHYL	98-56-6	1-5
BUTOXYETHOXY ETHYLACETATE	124-17-4	1-5
2-4 PENTANEDIONE	123-54-6	1-5
ETHYL BENZENE	100-41-4	0.1-1.0
CARBON BLACK	1333-86-4	0.1-1.0

ALL INGREDIENTS ARE ON THE TSCA INVENTORY LIST, UNLESS OTHERWISE NOTED IN SECTION 8.

Section 4 - First Aid Measures

First Aid - Eye Contact: If material gets into eyes, flush with water immediately for 15 minutes. Hold eyelids open to rinse out the entire eye. Consult a physician. If eyes are irritated from airborne exposure, move to fresh air.

First Aid - Skin Contact: Remove contaminated clothing and shoes. In case of contact, immediately flush skin with plenty of water and wash affected areas thoroughly with soap and water for at least 15 minutes. Wash contaminated clothing thoroughly before reuse or discard.

First Aid - Inhalation: Move to fresh air in case of accidental inhalation of vapors. Give oxygen or artificial respiration if needed. Asthmatic type symptoms may develop and maybe immediate or delayed by several hours. In the case of inhalation of aerosol/mist, consult a physician, if necessary.

First Aid - Ingestion: Do not induce vomiting. Do not give anything to an unconscious person. Obtain medical help.

Section 5 - Fire Fighting Measures

Flash Point (°F): 76 TCC LOWER EXPLOSIVE LIMIT UPPER EXPLOSIVE LIMIT (%): 11.
(%): 0.8

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Spray, Dry Sand, Dry Powder
Unusual Fire And Explosion Hazards: Keep containers tightly closed. Isolate from heat, sparks, electrical equipment and open flame. Fire or intense heat may cause violent rupture of packages. Application to hot surfaces requires special precautions. Toxic gases may form when product burns. Remove all sources of ignition.

Special Firefighting Procedures: In the event of fire, wear self-contained breathing apparatus. Firefighters should wear full protective clothing. Flammable. Cool fire-exposed containers using water spray.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Evacuate all non-essential personnel. Remove all sources of ignition. Ventilate area. Contain and remove spilled material with inert absorbent and non-sparking tools. Use personal protective equipment as necessary. Dike to prevent entering any sewer or waterway. Soak up with vermiculite or inert absorbent material and dispose of as hazardous waste. Dike to prevent entering any sewer or waterway. Transfer liquid to a holding container.

Section 7 - Handling and Storage

Handling: Prevent prolonged breathing of vapors or spray mist. Avoid contact with eyes and skin. Do not take internally. Do not handle until the manufacturers safety precautions have been read and understood. Handle in accordance with good industrial hygiene and safety practice. Keep away from heat and sources of ignition. Use only in ventilated areas. Protect container against physical damage.

Storage: Store in buildings designed to comply with OSHA 1910.106. Avoid storing near high temperatures, fire, open flames, and spark sources. Keep containers upright to prevent leakage and tightly closed in a dry, cool, and well-ventilated place. Do not store with oxidizers. Protect material from direct sunlight.

Section 8 - Exposure Controls / Personal Protection

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
METHYL n-AMYL KETONE	50 ppm	N.E.	100 ppm	N.E.
TITANIUM DIOXIDE	10 mg/m3	N.E.	15 mg/m3	N.E.
n-BUTYL ACETATE	150 ppm	200 ppm	150 ppm	N.E.
ETHYL 3-ETHOXYPROPIONATE	N.E.	N.E.	N.E.	N.E.
BENZENE, 1-CHLORO-4 TRIFLUOROMETHYL	2.5 mg/m3	N.E.	2.5 mg/m3	N.E.
BUTOXYETHOXY ETHYLACETATE	N.E.	N.E.	N.E.	N.E.
2-4 PENTANEDIONE	N.E.	N.E.	N.E.	N.E.
ETHYL BENZENE	100 ppm	125 ppm	100 ppm	125 ppm
CARBON BLACK	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.

Notes

TITANIUM DIOXIDE CAS# 13463-67-7 - ACGIH/TLV & OSHA/PEL exposure limits are for the total dust. IARC Group 2B possibly carcinogenic to humans. Titanium Dioxide is considered by NIOSH to be a potential occupational carcinogen under Hazard Communication Standard, 29 CFR 1910.1200. This was based on NIOSH's interpretation of the study by Lee, Trochimowicz, and Reinhardt [1985], "Pulmonary Response of Rats Exposed to Titanium Dioxide (TiO₂) by Inhalation for Two Years." "The authors of this study concluded that based on the excessive dust loading and overwhelmed clearance mechanism in the lungs of rats exposed chronically at 250 mg/m³ (6 hrs/day, 5 days/week for 2 years), the biological relevance of lung tumors to man appears to be negligible." As of September 2, 2011 As Known To The State Of California To Cause Cancer: titanium dioxide (airborne, unbound particles of respirable size)

n-BUTYL ACETATE CAS# 123-86-4 - This component has been shown to cause harm to the fetus in laboratory animals. It only caused harm at levels of overexposure that would also harm the pregnant animal. The relevance to humans is unknown.

ETHYL 3-ETHOXYPROPIONATE CAS# 763-69-9 - Manufacturer recommends a workplace exposure limit of 50 ppm-TWA; 100 ppm-STEL. This component has been shown to cause harm to the fetus in laboratory animals. It only caused harm at levels of overexposure that would also harm the pregnant animal. The relevance to humans is unknown. It also has been shown to cause mild, reversible liver effects in laboratory animals.

BENZENE, 1-CHLORO-4 TRIFLUOROMETHYL CAS# 98-56-6 prolonged or repeated exposure to large amount through breathing or swallowing has been shown cause damage to the liver and kidneys in animal studies.

2-4 PENTANEDIONE CAS# 123-54-6, Union Carbide recommends a TLV of 20 ppm - TWA.

ETHYL BENZENE CAS# 100-41-4 - IARC Group 2B possibly carcinogenic to humans.

CARBON BLACK CAS# 1333-86-4 - IARC GROUP 2B: possibly carcinogenic to humans.

Engineering Controls: Local ventilation of emission sources may be necessary to maintain ambient concentrations below permissible OSHA exposure limits. Remove all ignition sources (heat, sparks, flame, and hot surfaces).

Respiratory Protection: A respirator recommended or approved for use in an organic vapor environment (air purifying or fresh air supplied) may be necessary. Observe OSHA regulations for respirator use. Ventilation should be provided to keep exposure levels below permissible OSHA limits. If TLV limits can be maintained and documented below OSHA/ACGIH limits, an air supplied respirator may not be required. Other OSHA/NIOSH approved respirators may be used. IT IS THE END USER'S RESPONSIBILITY TO DETERMINE PROPER PROTECTION.

Skin Protection: Solvent-resistant gloves.

Eye Protection: Wear safety eyewear (safety glasses, safety glasses with side-shields, chemical goggles, or face shields) to prevent eye contact.

Other protective equipment: Long sleeve and long leg clothing is recommended. Remove and wash contaminated clothing before reuse or discard. Safety shower and eyewash station should be located in immediate work area.

Hygienic Practices: Wash hands before breaks, eating, smoking, using washroom, and at the end of the workday.

Section 9 - Physical and Chemical Properties

Boiling Range (°F):	260 - 475	Vapor Density:	> 1 (AIR = 1)
Odor:	METHYL n-AMYL KETONE, n-BUTYL ACETATE, & ETHYL, 3-ETHOXY PROPIONATE SOLVENTS	Odor Threshold:	N.D.
Appearance:	Gray liquid	Evaporation Rate:	ND
Solubility in H ₂ O:	ND	Specific Gravity:	1.249
Freeze Point:	N.D.	PH:	N.A.
Vapor Pressure, mm Hg:	3.0	Viscosity:	> 18 #2 ZAHN CUP SECONDS (> 20 cps)
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability and Reactivity

Conditions To Avoid: Avoid high temperatures, sparks, or open flames. Do not breathe vapors or spray mist.

Incompatibility: Material is incompatible with strong oxidizing agents, strong bases, and amines. THIS PRODUCT CONTAINS 2,4-PENTANEDIONE, WHICH IS CORROSIVE TO IRON AND STEEL. DO NOT STORE IN UNLINED IRON OR STEEL CONTAINERS. Material is incompatible with strong acids. A component is incompatible with bromates, nitrates, and chlorates.

Hazardous Decomposition: Thermal decomposition can lead to the generation and release of gases and vapors including carbon monoxide, carbon dioxide, oxides of nitrogen, and hydrocarbons. May produce gases containing fluorine or chlorine. Carbon black pigments can produce sulfur oxides when burned.

Hazardous Polymerization: Will not occur.

Stability: Stable under recommended storage conditions, however one of the components may form peroxides of unknown stability.

Section 11 - Toxicological Information

Product LD50: N.E.

Product LC50: N.E.

Section 12 - Ecological Information

Ecological Information: No Information.

Section 13 - Disposal Information

Disposal Information: Dispose of waste in accordance with federal, state, and local environmental regulations. Empty containers will contain product residue and flammable vapors. Handle as hazardous material. Do not incinerate closed containers. EPA Hazardous Waste Number/Code: D001, F003, F005. Hazardous Waste Characteristics: Ignitability and Reactivity.

Section 14 - Transportation Information

DOT Proper Shipping Name:	Paint	Packing Group:	III
DOT Technical Name:	N.A.	Hazard Subclass:	N.A.
DOT Hazard Class:	FLAMMABLE LIQUID 3	Resp. Guide Page:	N.A.
DOT UN/NA Number:	UN-1263	IATA:	REGULATED

Section 15 - Regulatory Information**CERCLA – SARA Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Component</u>	<u>CAS Number</u>	<u>Percent By Weight</u>
ETHYL BENZENE	100-41-4	0.2309

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

<u>Component</u>	<u>CAS Number</u>
2-4 PENTANEDIONE	123-54-6
1-METHYL-2-PYRROLIDONE	872-50-4
p-XYLENE OR PARA-XYLENE	106-42-3

U.S. State Regulations: As follows –**New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

<u>Component</u>	<u>CAS Number</u>
POLYESTER RESIN	PROPRIETARY
WOLLASTONITE	13983-17-0
PRECIPITATED SILICA	7631-86-9
POLYESTER POLYOL	TRADE SECRET

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

<u>Component</u>	<u>CAS Number</u>
POLYESTER RESIN	PROPRIETARY
WOLLASTONITE	13983-17-0
PRECIPITATED SILICA	7631-86-9
POLYESTER POLYOL	TRADE SECRET

California Proposition 65:

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Component</u>	<u>CAS Number</u>	<u>Percent By Weight</u>
TITANIUM DIOXIDE	13463-67-7	9.8903
ETHYL BENZENE	100-41-4	0.2309
CARBON BLACK	1333-86-4	0.1136
FORMALDEHYDE	50-00-0	0.0013
ETHYL ACRYLATE	140-88-5	0.0001
BENZENE	71-43-2	0.0000

Warning: The following ingredients present in the product are known to the state of California to cause

birth defects, or other reproductive hazards.

Component	CAS Number	Percent By Weight
1-METHYL-2-PYRROLIDONE	872-50-4	0.0019
TOLUENE	108-88-3	0.0009
BENZENE	71-43-2	0.0000

International Regulations: As follows –

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B2, D2B

Section 16 - Other Information

HMIS Ratings:

Health: 1 Flammability: 3 Reactivity: 0 Personal Protection: G

NFPA Fire Rating: 3

NFPA Health Rating: 2

NFPA Specific Hazard Rating: NA

NFPA Stability Rating: 1

VOLATILE ORGANIC COMPOUNDS, GR/LTR: 459

VOLATILE ORGANIC COMPOUNDS, LB/GAL: 3.83

VOLATILE ORGANIC COMPOUNDS MIXED, GR/LTR: <= 420

VOLATILE ORGANIC COMPOUNDS MIXED, LB/GAL: <= 3.5

VOLATILE ORGANIC COMPOUNDS, LB/LB-SOLID: <= 0.58

VOLATILE ORGANIC COMPOUNDS OF MATERIAL (SCAQMD RULE 443.1), GR/LTR: 443

VOLATILE ORGANIC COMPOUNDS OF MATERIAL (SCAQMD RULE 443.1), LB/GAL: 3.69

VOLATILE HAPs PER WEIGHT SOLIDS, LB./LB. 0.03749

REASON FOR REVISION: UPDATED SPECIFICATION REVISION AND PROPOSITION 65

REGULATORY CODE: 03GY287

LAYOUT CODE: A2004R

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.