International. MATERIAL SAFETY DATA SHEET

prepared 07/27/10

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DEVMAT 111

HAZARDS IDENTIFICATION (ANSI Section 3)

Primary route(s) of exposure : Inhalation, skin contact, eye contact, ingestion.

Effects of overexposure :

Inhalation : Irritation of respiratory tract. Inhalation of aerosols and mists may severly damage contacted tissue and produce scarring. Prolonged inhalation may lead to fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, abdominal pain, chest pain, sore throat, coughing, central nervous system depression, difficulty of breathing, allergic response, asthmatic reaction, abnormal blood pressure, severe respiratory tract irritation, convulsions, pneumoconiosis, loss of consciousness. Possible sensitization to respiratory tract.

Skin contact : Irritation of skin, this material is corrosive and may cause burns on contact. Prolonged or repeated contact can cause dermatitis, defatting, allergic response, severe skin irritation or burns. Possible sensitization to skin. Skin contact may result in dermal absorption of component(s) of this product which may cause dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, central nervous system depression, anesthetic effect or narcosis, convulsions, loss of consciousness.

Eye contact : Irritation of eyes, this material is corrosive and may cause burns on contact. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, redness of eyes, severe eye irritation, severe eye irritation or burns, corneal injury, blindness.

Ingestion : Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, visual disturbances, central nervous system depression, difficulty of breathing, burns of the mouth, throat, stomach, convulsions, loss of consciousness. Eye damage.

Medical conditions aggravated by exposure : Eye, skin, respiratory disorders, lung disorders, kidney disorders, liver disorders, nervous system disorders, respiratory disorders.

FIRST-AID MEASURES (ANSI Section 4)

Inhalation : Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Remove to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort.

Skin contact : Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use. Dispose of contaminated leather items, such as shoes and belts.

Eye contact : Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

Ingestion : If swallowed, obtain medical treatment immediately.

FIRE-FIGHTING MEASURES (ANSI Section 5)

Fire extinguishing media : Dry chemical or foam water fog. Carbon dioxide. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Closed containers may burst if exposed to extreme heat or fire. May decompose under fire conditions emitting irritant and/or toxic gases.

Fire fighting procedures : Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus.

Hazardous decomposition or combustion products : Carbon monoxide, carbon dioxide, oxides of nitrogen, formaldehyde, oxides of sulfur, ammonia, organic acids, oxides of silicon, aldehydes, acids, isocyanate, barium compounds.

ACCIDENTAL RELEASE MEASURES (ANSI Section 6)

Steps to be taken in case material is released or spilled : Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Use non-sparking tools. Evacuate all unnecessary personnel. Place collected material in proper container. Complete personal protective equipment must be used during cleanup. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

HANDLING AND STORAGE (ANSI Section 7)

Handling and storage : Store below 100f (38c). Store in original containers. Isolated storage is desirable. Keep away from heat, sparks and open flame.

Other precautions : Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Empty containers may contain hazardous residues. Ground equipment when transferring to prevent accumulation of static charge.

EXPOSURE CONTROLS/PERSONAL PROTECTION (ANSI Section 8)

Respiratory protection : Respiratory protection is required. A positive pressure supplied air respirator should normally be used for spray applications. Following job-specific exposure/air quality evaluations, alternative respiratory equipment may be used in accordance with applicable regulatory standards and general standards for industrial hygiene.

Ventilation : Provide dilution ventilation or local exhaust to prevent build-up of vapors.

Personal protective equipment : Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing, face shield, apron, boots. Pvc/nitrile or neoprene boots and gloves.

STABILITY AND REACTIVITY (ANSI Section 10)

Under normal conditions : Stable see section 5 fire fighting measures

Materials to avoid : Oxidizers, acids, reducing agents, bases, aldehydes, isocyanates, halogens, amines, alkalis, water, aluminum, zinc, copper, hypochlorites, halogenated compounds, combustible materials, mineral acids, sodium. Nitrates. Nitrites - nitrites mixed with amines may form a nitrosamine which may cause cancer.

Conditions to avoid : Elevated temperatures, contact with oxidizing agent, sparks, open flame, ignition sources. Contact with combustible materials contact with water or moist air may form flammable and/or, toxic gases or vapors.

Hazardous polymerization : Will not occur may polymerize in presence of aliphatic amines.

TOXICOLOGICAL INFORMATION (ANSI Section 11)

Supplemental health information : Contains a chemical that is toxic by ingestion. Contains cyclohexanamine,4,4'-methylenebis-(pacm). Pacm has the potential for chronic toxicity. Liver injury has been observed in animal studies following oral administration. Skin contact with the uncured material should not be permitted. Other toxicity information on pacm includes: salmonella mutagenicity assay (ames test) in the presence and absence of metabolic activation showed no evidence of mutagenicity. Dogs given daily oral doses of 50 mg/kg pacm, 5 days per week for up to 18 months experienced kidney and liver damage. The longest continual exposure period was 18 months, therefore the exposure durations were not long enough to conclude anything about the carcinogenic potential of pacm. This material is corrosive; avoid contact. Contains a chemical that may be absorbed through skin. Contact with eyes may cause permanent injury. Notice - reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Contains iron oxide, repeated or prolonged exposure to iron oxide dust may cause siderosis, a benign pneumoconiosis. This product hydrolyses in the stomach to form methanol. Human health effects related to methanol overexposure may include nausea, headache, weakness, temporary nervous system depression (as evidenced by anesthetic effects such as dizziness, headache, confusion, incoordination, loss of conciousness), or blindness. Higher exposures may lead to abnormal liver and kidney function. Ingestion of as little as 60 ml of methanol may cause blindness or fatality. Methanol cannot be made nonpoisonous. Other effects of overexposure may include toxicity to liver, kidney.

Carcinogenicity : Contains crystalline silica which is considered a hazard by inhalation. IARC has classified crystalline silica as carcinogenic to humans (group 1). Crystalline silica is also a known cause of silicosis, a noncancerous lung disease. The national toxicology program (NTP) has classified crystalline silica as a known human carcinogen. In a lifetime inhalation study, exposure to 250 mg/m3 titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Reproductive effects : No reproductive effects are anticipated

Mutagenicity : Mutation in microorganisms - salmonella typhimurium 100 ug/plate (+/-s9)

Teratogenicity : No teratogenic effects are anticipated

ECOLOGICAL INFORMATION (ANSI Section 12)

No ecological testing has been done by akzo nobel paints llc on this product as a whole.

DISPOSAL CONSIDERATIONS (ANSI Section 13)

Waste disposal : Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

REGULATORY INFORMATION (ANSI Section 15)

As of the date of this MSDS, all of the components in this product are listed (or are otherwise exempt from listing) on the TSCA inventory. This product has been classified in accordance with the hazard criteria of the CPR (controlled products regulations) and the MSDS contains all the information required by the CPR.

Physical Data (ANSI Sections 1, 9, and 14)

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMIS	DOT, proper shipping name
111B1475	devmat 111 100% solids epoxy tank coating - #3buff base	16.01	96.95	10.02	above 200f	225-365	*310	paint ** protect from freezing **
111B2370	devmat 111 100% solids epoxy tank coating - #3 mist gray base	15.99	97.54	10.09	above 200f	225-365	*310	paint ** protect from freezing **
111BC147	devmat 111kc 100% solids epoxy tank lining - #3 buff base	16.45	56.84	5.70	above 200f	225-554	*310	paint ** protect from freezing **
111BC237	devmat 111kc 100% solids epoxy tank lining - #3 mist gray base	16.51	54.96	5.54	above 200f	225-554	*310	paint ** protect from freezing **
111C0980	devmat 111 converter	8.43	353.78	34.02	above 200f	400-400	310	UN3066, paint related material, 8, PGIII

Ingredients Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	111B1475	111B2370	111BC147	111BC237	111C0980
benzenemethanol	benzyl alcohol	100-51-6	1-5	1-5	1-5	1-5	30-40
1,2-ethanediamine, n-(2-aminoethyl)-n'-(2-((2- aminoethyl)amino)ethyl)-	tetraethylenepentamine	112-57-2					1-5
cyclohexanamine, 4,4'-methylenebis-, reaction produ bisphenol a diglycidyl ether homopolymer	cyclohexanamine, 4,4'-methylenebis-, reaction prod	129733-57-9					20-30
titanium oxide	titanium dioxide	13463-67-7	5-10	5-10	5-10	5-10	
quartz	quartz	14808-60-7			.1-1.0	.1-1.0	
oxirane,2,2'-(((1-methylethylidene) bis (4,1-phenyleneoxymethylene))) bis-	diglycidyl ether of bisphenol a	1675-54-3	10-20	10-20	10-20	10-20	
cyclohexanamine, 4,4'-methylenebis-	methylenedi(cyclohexylamine)	1761-71-3					20-30
silane, triethoxymethyl-	methyltriethoxysilane	2031-67-6	1-5	1-5			
phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl) oxirane	epoxy resin	25068-38-6	20-30	20-30	20-30	20-30	
2-propenoic acid, 2-methyl-,(trimethoxysilyl)- propyl ester	organosilane ester	2530-83-8			1-5	1-5	
c.i. pigment yellow 42	yellow iron oxide	51274-00-1	1-5		1-5		
fatty acids, tall-oil, reaction products with tetraethylenepentamine	tofa, reaction products with tepa	68953-36-6					10-20
sulfuric acid, barium salt	barium sulfate	7727-43-7	40-50	40-50	40-50	40-50	
benzene,1,2,4-trimethyl-	pseudocumene	95-63-6	.1-1.0	.1-1.0	.1-1.0	.1-1.0	
epoxy resin	epoxy resin	Sup. Conf.	1-5	1-5	1-5	1-5	
modified fatty acid	modified fatty acid	Sup. Conf.	1-5	1-5			

Chemical Hazard Data (ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV 8-Hour TWA	ACGIH-TLV STEL	ACGIH-TLV C	ACGIH-TLV S	OSHA-PEL 8-Hour TWA	OSHA-PEL STEL	OSHA-PEL C	OSHA-PEL S	S.R. Std.	S2	S3	CC	H	M	N	I	O
benzyl alcohol	100-51-6	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
tetraethylenepentamine	112-57-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
cyclohexanamine, 4,4'-methylenebis-, reaction prod	129733-57-9	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
titanium dioxide	13463-67-7	10 mg/m3	not est.	not est.	not est.	10 mg/m3	not est.	not est.	not est.	not est.	n	n	n	n	n	y	y	n
quartz	14808-60-7	.025 mg/m3	not est.	not est.	not est.	0.1 mg/m3	not est.	not est.	not est.	not est.	n	n	n	n	n	y	y	n
diglycidyl ether of bisphenol a	1675-54-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
methylenedi(cyclohexylamine)	1761-71-3	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
methyltriethoxysilane	2031-67-6	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
epoxy resin	25068-38-6	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
organosilane ester	2530-83-8	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
yellow iron oxide	51274-00-1	5 mg/m3	not est.	not est.	not est.	10 mg/m3	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
tofa, reaction products with tepa	68953-36-6	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
barium sulfate	7727-43-7	10 mg/m3	not est.	not est.	not est.	5 mg/m3	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
epoxy resin	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
modified fatty acid	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n

Footnotes:

C=Ceiling - Concentration that should not be exceeded, even instantaneously.

S=Skin - Additional exposure, over and above airborn exposure, may result from skin absorption.

n/a=not applicable
not est=not established
CC=CERCLA Chemical

ppm=parts per million
mg/m3=milligrams per cubic meter
Sup Conf=Supplier Confidential

S2=Sara Section 302 EHS
S3=Sara Section 313 Chemical
S.R.Std.=Supplier Recommended Standard

H=Hazardous Air Pollutant, M=Marine Pollutant
P=Pollutant, S=Severe Pollutant
Carcinogenicity Listed By:
N=NTP, I=IARC, O=OSHA, y=yes, n=no

DEVOE HIGH PERFORMANCE COATINGS

AkzoNobel