MATERIAL SAFETY DATA SHEET

STANDARD TOP COAT - EPOXY

IDENTIFICATION AND EMERGENCY INFORMATION

Product Name: Devran 224HS (N Formula)
Supplier - Pulsafeeder Inc., 2883 Brighton-Henrietta Town Line Road, Rochester, NY 14623, (585)292-8000
Emergency Telephone - (800) 545-2643

HAZARDS IDENTIFICATION (ANSI Section 3)

Primary route(s) of exposure: Inhalation, skin contact, eye contact, ingestion.
Effects of overexposure:
Inhalation: Irritation of respiratory tract. Prolonged inhalation may lead to mucous membrane irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, chest pain, blurred vision, coughing, choking, difficulty with speech, apathy, central nervous system depression, intoxication, tightness of chest, metallic taste, anesthetic effect or narcosis, difficulty of breathing, allergic response, fever and chills, dehydration, tremors, abnormal blood pressure, liver damage, kidney damage, pulmonary edema, pneumoconiosis, loss of consciousness, cyanosis, respiratory failure, asphyxiation, death. Possible sensitization to respiratory tract.
Skin contact: Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting, blistering, allergic response, severe skin irritation, or burns. Possible sensitization to skin.
Eye contact: Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, severe eye irritation, severe eye irritation or burns, corneal injury.
Ingestion: Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, mucous membrane irritation, drowsiness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, visual disturbances, apathy, central nervous system depression, intoxication, anesthetic effect or narcosis, difficulty of breathing, burns of the mouth, throat, stomach, liver damage, pulmonary edema, convulsions, loss of consciousness, respiratory failure, death.
Medical conditions aggravated by exposure: Eye, skin, 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 products remain, 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. If irritation occurs, consult a physician.
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. Closed containers may exploded when exposed to extreme heat or fire. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Vapors can form explosive mixtures in air at elevated temperatures. 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. Self-contained breathing apparatus recommended.

Hazardous decomposition or combustion product: Carbon monoxide, carbon dioxide, oxides of nitrogen, acrid fumes, oxides of sulfur, aldehydes, toxic gases, barium compounds, smoke and soot. Cyanides.

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. Ventilate area with explosion-proof equipment. Spills may be collected with absorbent materials. Evacuate 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). 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. Avoid conditions which result in formation of inhalable particles such as spraying or abrading (sanding) painted surfaces. If such conditions cannot be avoided, use appropriate respiratory protection as directed under exposure controls/personal protection. 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: Control environmental concentrations, below applicable exposure standards when using this material. When respiratory protection is determined to be necessary, use a NIOSH/MSHA (Canadian z94.4). Approved elastomeric sealing-surface facepiece respirator outfitted with organic vapor cartridges and paint spray (dust/mist) prefilters. Determine the proper level of protection by conducting appropriate air monitoring. Consult 29CFR1910.134 for selection of respirators (Canadian z94.4).

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

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

STABILITY AND REACTIVITY (ANSI Section 10)

Under normal conditions: Stable see section 5 fire fighting measures

Material to avoid: Oxidizers, acids, reducing agents, bases, aldehydes, amines, nitric acid, phosphorous, lewis acids, mineral acids.

Conditions to avoid: Elevated temperatures, contact with oxidizing agent, storage near acids, sparks, open flame, ignition sources.

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 moderately toxic by ingestion. Contains a chemical that is readily absorbed through skin. Contains a chemical that may be absorbed through skin. 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. Other effects of overexposure may include toxicity to liver, kidney, central nervous system, blood.

Carcinogenicity: Inhalation of non-asbestiform cosmetic grade talc for 2 years at 6 and 18 mg/m3 produced clear evidence of carcinogenicity in female rats (lung and adrenal tumors) and some evidence of carcinogenicity in male rats (adrenal tumors). No evidence of carcinogenicity was demonstrated in male and female mice under the same conditions. Microscopic examination of the lungs of rats and mice exposed to talc revealed additional exposure related effects primarily associated with the inflammatory response. 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 as a known human carcinogen. The international agency for research on cancer (IARC) has classified carbon black as possibly carcinogenic to humans (groups 2b) based on sufficient evidence in animals and inadequate evidence in humans. The international agency for research on cancer (IARC) has evaluated ethylbenzene and classified it as a possible human carcinogen (group 2b) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer exposed humans. In a 2 year inhalation study conducted by the national toxicology program (NTP), ethylbenzene vapor at 750 ppm produced kidney and testicular tumors in rats and lung and liver tumors in mice. Genetic toxicity studies showed no genotoxic effects. The relevance of these results to humans is not known.

Reproductive effects: High exposures to xylene in some animal studies, often at maternally toxic levels, have affected embryo/fetal development. The significance of this finding is not known.

Mutagenicity: No mutagenicity effects are anticipated

Teratogenicity: No teratogenic effects are anticipated

ECOLOGICAL INFORMATION (ANSI Section 12)

No ecological testing has been done by ICI paints 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 14)

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 Point	HMIS	Dot, proper shipping name
224FN2531	Devran 224hs high build epoxy coating-in gray base	12.74	244.23	29.25	100f	241-355	*220	Paint, combustible liquid, UN 1263, PGIII
224FN2534	Devran 224hs high build epoxy coating-medium gray base	12.76	243.51	29.18	100f	241-355	*220	Paint, combustible liquid, UN 1263, PGIII
224FN2904	Devran 224hs high build epoxy coating-haze gray base	12.75	244.59	29.30	100f	241-355	*220	Paint, combustible liquid, UN 1263, PGIII
224FN3501	Devran 224hs high build epoxy coating-white base	13.07	247.82	29.72	100f	241-355	*220	Paint, combustible liquid, UN1263 PGIII
224FN9501	Devran 224hs high build epoxy coating deep tint base	11.86	264.60	31.73	100f	241-415	*320	Paint, combustible liquid, UN1263, PGIII
224FN9502	Devran 224hs high build epoxy coating neutral tint base	10.85	272.39	32.67	100f	241-415	*320	Paint, combustible liquid, UN1263, PGIII
224GN0908	Devran 224hs high build epoxy coating-converter	11.70	241.35	28.03	100f	277-415	*320	Paint, combustible liquid, UN1263. PGIII

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

Chemical Name	Common Name	CAS. No.	224FN2531	224FN2534	224FN2904	224FN3501	224FN9501	224FN9502	224GN0908
Benzene, ethyl-	Ethylbenzene	100-41-4	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0
2-pentanone, 4-methyl	Methyl isobutyl ketone	108-10-1	1-5	1-5	1-5	1-5	5-10	5-10	
1,3,5-trimethylbenzene	1,3,5-trimethylbenzene	108-67-8	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	1-5	.1-1.0
1,2,ethanadiamine,n,n'-bis(2-aminoethyl)-	Triethylene tetramine	112-24-3							1-5

Chemical Name	Common Name	CAS. No.	224FN2531	224FN2534	224FN2904	224FN3501	224FN9501	224FN9502	224GN0908
Antigorite	Antigorite	12135-86-3	1-5	1-5	1-5	1-5	1-5	1-5	1-5
Benzene, dimethyl	Xylene	1330-20-7	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	1-5	1-5
Carbon black	Carbon black	1333-86-4		.1-1.0	.1-1.0				
Titanium oxide	Titanium oxide	13463-67-7	5-10	5-10	5-10	10-20	10-20		
Tremolite, nonasbestiform	Tremolite	14567-73-8	5-10	5-10	5-10	5-10	5-10	5-10	5-10
Talc	Talc	14807-96-6	5-10	5-10	5-10	1-5	1-5	1-5	1-5
Quartz	Quartz	14808-60-7	10-20	10-20	10-20	10-20	10-20	10-20	5-10
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	10-20	20-30	
Anthophyllite, nonasbestiform	Anthophyllite	17068-78-9	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0	.1-1.0
Aluminum hydroxide	21645-51-2	1-5	1-5						
Phenol,4,4'-(1-methylethylidene)bis-,polymer with 2,2'-((1-methylethylidene)bis(4,1-phenyleneoxymethylene))bis(oxirane)	Epoxy resin	25036-25-3	10-20	10-20	10-20	10-20	10-20	20-30	
Solvent naphtha	Light aromatic solvent naphtha	64742-95-6	1-5	1-5	1-5	1-5	1-5	1-5	5-10

Chemical Name	Common Name	CAS. No.	224FN2531	224FN2534	224FN2904	224FN3501	224FN9501	224FN9502	224GN0908
Fatty acids, c18-unsatd.,dimmers, reaction products with polyethylenepolyamines	Polyamide resin	68410-23-1							20-30
Silica	Barium sulfate	7663 1-86-9	1-5	1-5	1-5	1-5			
Sulfuric acid, barium salt	Barium sulfate	7727-43-7							20-30
Benzene,1,2,4-trimethyl-	Pseudocumene	95-63-6	1-5	1-5	1-5	1-5	1-5	1-5	5-10
Castor oil dericative	Rheologivcal additive	Sup. Conf.						1-5	

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

Common Name	CAS. No.	8-Hour TWA	STEL	C	S	8-Hour TWA	STEL	C	S	S.R. Std.	S2	S3	CC	H	M	N	I	O
Ethylbenzene	100-41-4	100 ppm	125 ppm	NA	NA	100 ppm	NA	NA	NA	NA	N	Y	Y	Y	N	N	Y	N
Methyl isobutyl ketone	108-10-1	50 ppm	75 ppm	NA	NA	100 ppm	NA	NA	NA	NA	N	Y	Y	Y	N	N	N	N
1,3,5 Triethylbenzene	108-67-8	25 ppm	35 ppm	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Triethylene tetramine	112-24-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Antigorite	12135-86-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Xylene	1330-20-7	100 ppm	150 ppm	NA	NA	100 ppm	NA	NA	NA	NA	N	Y	Y	Y	N	N	N	N
Carbon Black	133-86-4	3.5 mg/m3	NA	NA	NA	NA	3.5 mg/m3	NA	NA	NA	NA	N	N	N	N	N	N	Y	N
Titanium dioxide	13463-67-7	10 mg/m3	NA	NA	NA	NA	10 mg/m3	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Tremolite	14567-73-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Talc	14807-96-6	2 mg/m3	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N

Quartz	14808-60-7	.05 mg/m3	NA	NA	NA	.01 mg/m3	NA	NA	NA	NA	N	N	N	N	N	Y	Y	N
Diglycidyl ether of bisphnol a	1675-54-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Anthophyllite	17068-78-9	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Aluminum hydroxide	21645-51-2	10 mg/m3	NA	NA	NA	5 mg/m3	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Epoxy resin	25036-25-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Light aromatic solvent naphtha	64742-95-6	NA	NA	NA	500xppm	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Polyamide resin	68410-23-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
n-butanol	71-36-3	20 ppm	NA	NA	NA	100 mg/m3	NA	NA	NA	NA	N	Y	Y	N	N	N	N	N
Amorphous silica	7631-86-9	10 mg/m3	NA	NA	NA	6 mg/m3	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Barium sulfate	7727-43-7	10 mg/m3	NA	NA	NA	5 mg/m3	NA	NA	NA	NA	N	N	N	N	N	N	N	N
4-nonylphenol, branched	84852-15-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	N	N	N	N	N	N	N
Pseudocumene	95-63-6	25 ppm	NA	NA	NA	NA	NA	NA	NA	NA	N	Y	N	N	N	N	N	N
Rheological additive	Sup.Conf.	NA	N	NA	NA	NA	NA	NA	NA	NA	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
NA = 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