

U-499 Part A

1	PRODUCT AND COMPANY IDENTIFICATION
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Product Identifier: U-499 Part A
Common Name: Epoxy resin
SDS Number: I74
Revision Date: 11/17/2015
Version: 1
Supplier Details: Coatings For Industry, Inc.
 319 Township Line Road
 Souderton, PA 18964
Emergency Contact: Infotrac
Contact: USA: 1-800-535-5053 / International :352-323-3500
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2	HAZARDS IDENTIFICATION
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Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

- Health, Reproductive toxicity, 1 B
- Health, Respiratory or skin sensitization, 1 Skin
- Health, Skin corrosion/irritation, 2
- Health, Serious Eye Damage/Eye Irritation, 2 A
- Physical, Flammable Liquids, 3
- Health, Specific target organ toxicity - Single exposure, 3
- Health, Acute toxicity, 4 Dermal
- Health, Acute toxicity, 4 Inhalation
- Health, Acute toxicity, 5 Oral
- Environmental, Hazards to the aquatic environment - Chronic, 2

GHS Label elements, including precautionary statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:



GHS Hazard Statements:

- H360 - May damage fertility or the unborn child
- H317 - May cause an allergic skin reaction
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H226 - Flammable liquid and vapor
- H336 - May cause drowsiness or dizziness
- H312 - Harmful in contact with skin
- H332 - Harmful if inhaled
- H303 - May be harmful if swallowed
- H411 - Toxic to aquatic life with long lasting effects

GHS Precautionary Statements:

- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do.

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Continue rinsing.
 P273 - Avoid release to the environment.
 P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
 P264 - Wash hands and skin thoroughly after handling.

3	COMPOSITION/INFORMATION ON INGREDIENTS
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Ingredients:

Cas#	%	Chemical Name
1330-20-7	5-10%	xylene
25068-38-6	20-30%	Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane
763-69-9	0-1%	Propanoic acid, 3-ethoxy-, ethyl ester
98-56-6	16-19%	Benzene, 1-chloro-4-(trifluoromethyl)-
108-65-6	7-10%	2-Propanol, 1-methoxy-, acetate
28064-14-4	1-5%	Phenol, polymer with formaldehyde, glycidyl ether
13463-67-7	5-10%	Titanium oxide (TiO ₂)
14807-96-6	10-15%	Talc (containing no asbestos fibers)
7779-90-0	10-20%	Phosphoric acid, zinc salt (2:3)
1333-86-4	0-0.5%	Carbon black

4	FIRST AID MEASURES
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Inhalation: Remove to fresh air. If not breathing, give mouth to mouth resuscitation. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin Contact: Wash off in flowing water or shower.

Eye Contact: Irrigate immediately with water for at least 5 minutes. Seek medical attention.

Ingestion: Do not induce vomiting. Call a physician and/or transport to emergency medical facility immediately.

5	FIRE FIGHTING MEASURES
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Flash Point: 80F (27C)
Flash Point Method: PMCC
LEL: 1.1% based on Xylene
UEL: 7.0% based on Xylene

Extinguishing Media - Foam, Dry Chemical, Carbon Dioxide (CO₂)
 Fire and Explosion Hazards - Presence of xylene requires grounding. Keep away from possible ignition sources.
 Fire Fighting Equipment - Wear positive pressure self-contained breathing apparatus.

6	ACCIDENTAL RELEASE MEASURES
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If Material is Spilled - Soak up in absorbent material such as sand and collect in suitable containers. Residual resin may be removed using steam or hot soapy water. Solvents are not recommended for cleanup unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent MSDS for handling information and exposure guidelines. Keep spark producing equipment away. For large spills, evacuate upwind of spills and contain with dike.

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7 HANDLING AND STORAGE

Handling Precautions: General Handling: Keep away from heat, sparks and flame. Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Do not swallow. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Never use air pressure for transferring product. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Electrically bond and ground all containers and equipment before transfer or use of material. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

Storage Requirements: Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in original container. Keep container tightly closed.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide general and/or local exhaust ventilation to control airborne levels below the TLV.

Personal Protective Equipment: Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection: impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Eye protection: Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Xylene (1330-20-7)

Components with workplace control parameters

TWA	100 ppm 435 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z- 1 Limits for Air Contaminants
TWA	100 ppm 435 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
STEL	150 ppm 655 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
TWA	100 ppm 434 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
Not classifiable as a human carcinogen		
STEL	150 ppm 651 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
Not classifiable as a human carcinogen		

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TWA 100 ppm USA. ACGIH Threshold Limit Values (TLV)
 Eye & Upper Respiratory Tract irritation Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI section) Not classifiable as a human carcinogen

STEL 150 ppm USA. ACGIH Threshold Limit Values (TLV)
 Eye & Upper Respiratory Tract irritation Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI section) Not classifiable as a human carcinogen

TWA 100 ppm USA. Occupational Exposure Limits (OSHA) - Table Z- 1
 435 mg/m³ Limits for Air Contaminants
 The value in mg/m³ is approximate.

TWA 100 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants -
 435 mg/m³ 1910.1000

STEL 150 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants -
 655 mg/m³ 1910.1000

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane (25068-38-6)

no data available

Propanoic acid, 3-ethoxy-, ethyl ester (763-69-9)

no data available

Benzene, 1-chloro-4-(trifluoromethyl)- (98-56-6)

no data available

2-Propanol, 1-methoxy-, acetate (108-65-6)

Components with workplace control parameters

TWA 50 ppm USA. Workplace Environmental Exposure Levels (WEEL)

Phenol, polymer with formaldehyde, glycidyl ether (28064-14-4)

no data available

Titanium Dioxide (13463-67-7)

PEL: (OSHA) 15 mg/m³ 8 hr. TWA Total dust.
 TLV : (ACGIH) 10 mg/m³ TWA

Talc (containing no asbestos fibers) (14807-96-6)

TWA 20 Million particles per ft³ of air USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
 Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques. Containing less than

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1% quartz; if 1% quartz or more, use quartz limit. mppcf X 35.3 = million particles per cubic meter = particles per c.c
 TWA 2 mg/m3 USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
 TWA 2 mg/m3 USA. NIOSH Recommended Exposure Limits
 TWA 2 mg/m3 USA. ACGIH Threshold Limit Values (TLV)
 Lower Respiratory Tract irritation The value is for particulate matter containing no asbestos and < 1% crystalline silica Not classifiable as a human carcinogen

Phosphoric acid, zinc salt (2:3) (7779-90-0)

Total dust ACGIH-91/93 TLV: TWA (USA) 10 mg/m3
 (no special effect)

Carbon black (1333-86-4)

TWA 3.5 mg/m3 USA. ACGIH Threshold Limit Values (TLV)
 Not classifiable as a human carcinogen
 TWA 3.5 mg/m3 USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
 TWA 3.5 mg/m3 USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
 TWA 3.5 mg/m3 USA. NIOSH Recommended Exposure Limits
 TWA 0.1 mg/m3 USA. NIOSH Recommended Exposure Limits
 Potential Occupational Carcinogen Carbon black in presence of polycyclic aromatic hydrocarbons (PAHs)
 See Appendix C
 See Appendix A

9	PHYSICAL AND CHEMICAL PROPERTIES
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Appearance:	Gray	Odor:	Solvent odor
Physical State:	Viscous liquid	Solubility:	Negligible in water
Spec Grav./Density:	1.4-1.6	Percent Volatile:	30-40% by weight

10	STABILITY AND REACTIVITY
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Chemical Stability:	This product is stable
Conditions to Avoid:	Xylene may produce excessive pressure when heated.
Materials to Avoid:	Bases
Hazardous Decomposition:	The by products expected in complete pyrolysis or combustion of epoxy resins are mainly phenolics, carbon monoxide and water. The thermal decomposition products of epoxy resins therefore should be treated as potentially hazardous substances, and appropriate precautions should be taken.
Hazardous Polymerization:	Will not occur by itself, but masses of more than one pound of product plus an aliphatic amine can cause irreversible polymerization with considerable heat buildup.

11	TOXICOLOGICAL INFORMATION
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Xylene (1330-20-7)

Acute toxicity:
 Oral LD50 no data available
 Inhalation LC50
 Dermal LD50
 Other information on acute toxicity
 Skin corrosion/irritation: no data available
 Serious eye damage/eye irritation: Eyes: no data available
 Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Ethylbenzene)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Xylene)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane (25068-38-6)

Acute toxicity:

Oral LD50 LD50 Oral - rat - 13,600 mg/kg Remarks: Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

Inhalation LC50 no data available

Dermal LD50

Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: May cause sensitization by skin contact.

Germ cell mutagenicity: no data available

Genotoxicity in vitro - Ames test - positive

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

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Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Propanoic acid, 3-ethoxy-, ethyl ester (763-69-9)

Acute toxicity:

Oral LD50 LD50 Oral - rat - male - > 5,000 mg/kg

LD50 Oral - rat - female - 4,309 mg/kg

Inhalation LC50 LC50 Inhalation - rat - male - 6 h - > 998 ppm

Dermal LD50 LD50 Dermal - rabbit - male - 4,080 mg/kg

LD50 Dermal - rabbit - female - 4,680 mg/kg

Other information on acute toxicity no data available

Skin corrosion/irritation: Skin - rabbit - No skin irritation - 4 h - OECD Test Guideline 404

Serious eye damage/eye irritation: Eyes - rabbit - No eye irritation - 24 h - OECD Test Guideline 405

Respiratory or skin sensitisation: guinea pig - Does not cause skin sensitisation. - OECD Test Guideline 406

Germ cell mutagenicity: Genotoxicity in vitro - S. typhimurium - with and without metabolic activation - negative

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):

no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: Nausea, Headache, Vomiting, Central nervous system depression, Dizziness

Additional Information:

Repeated dose toxicity - rat - male and female - Oral - No observed adverse effect level - 1,000 mg/kg RTECS: UF3325000

Benzene, 1-chloro-4-(trifluoromethyl)- (98-56-6)

a) INFORMATION ON LIKELY ROUTES OF EXPOSURE

See section 4 and 11(d).

b) SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS

See sections 2 and 4 and 11(d).

c) DELAYED AND IMMEDIATE EFFECTS

See section 4.

d) NUMERICAL MEASURES OF TOXICITY

ACUTE ORAL TOXICITY: LD50: >6.8 g/kg (rat)

ACUTE DERMAL: LD50: >2.7 g/kg (rabbit)

ACUTE INHALATION: LC50: > 4479 ppm (rat)
PRIMARY SKIN IRRITATION: non-irritating (rabbit)
PRIMARY EYE IRRITATION: non-irritating (rabbit)

A 28-day range-finding inhalation study was conducted in male and female Sprague-Dawley rats exposed to 0, 100, 250, 500, or 1000 ppm for 6 hour/day, 5 days/week. Clinical signs included increased activity at 250 ppm and above. Liver and kidney weights were increased. Microscopic changes in male kidneys stained positive for alpha-2-U globulin and the effects were considered not relevant to humans. Liver cell hypertrophy was seen at all exposures in males. Liver changes were consistent with clinical chemistry and PCBTF-blood level analysis and are believed to be an adaptive response, due to increased liver metabolism.

Gavage studies in laboratory rodents for treatment periods of 14, 28, and 90 days have demonstrated significant liver and kidney toxicity at dose levels of 400 - 1000 mg/kg/day.

Evidence of target organ toxicity included significant increases in relative liver and kidney weights, clinical chemistry values and histopathological findings. Renal toxicity which occurred only in male rats, was apparently due to "hyaline droplet" nephropathy and is therefore, highly unlikely to develop in man. The NOAEL's for all these studies range from 10 to 100 mg/kg/day. CNS effects were observed in rats exposed to PCBTF at or above 2822 ppm for 4 hours.

A 90 day (13 week) rat inhalation toxicity and neurobehavioral study was conducted using exposures of 6 hours/day, 5 days/week at concentrations of 0, 10, 50 and 250 ppm. There were no PCBTF-related macroscopic observations. Microscopically, PCBTF-related centrilobular hypertrophy was present only in the livers of males and females at the high dose (250 ppm) after 13-weeks of exposure. No centrilobular hypertrophy was observed at any level among recovery animals. There were no PCBTF-related effects on the nervous system as measured by a functional observation battery, muscular activity measurements and neuropathology. A NOEL of 50 ppm was established in this study for liver hepatocyte hypertrophy in male and female rats. If the hepatocyte hypertrophy observed is considered to be an adaptive response to PCBTF, the NOAEL for this study is 250ppm.

e) CARCINOGENICITY

This product does not contain any substances at > 0.1 weight % that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" carcinogens.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

2-Propanol, 1-methoxy-, acetate (108-65-6)

Acute toxicity:

Oral LD50 LD50 Oral - rat - 8,532 mg/kg

Inhalation LC50 no data available

Dermal LD50 LD50 Dermal - rabbit - > 5,000 mg/kg

Other information on acute toxicity

Skin corrosion/irritation: Skin - rabbit - No skin irritation

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitisation: Maximisation Test - guinea pig - Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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Reproductive toxicity: no data available

Teratogenicity: Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Phenol, polymer with formaldehyde, glycidyl ether (28064-14-4)

Information on toxicological effects

Acute toxicity:

Oral LD50 no data available

Inhalation LC50 no data available

Dermal LD50 no data available

Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitisation: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System): no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Synergistic effects: no data available

Additional Information:

RTECS: Not available

Titanium Dioxide (13463-67-7)

Inhalation 4 h LC50 : > 6.82 mg/l , Rat

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Dermal LD50 : > 10,000 mg/kg , Rabbit
Oral LD50 : > 5,000 mg/kg , Rat
Skin irritation : Slight or no skin irritation, Rabbit
Eye irritation : Slight or no eye irritation, Rabbit
Sensitisation : Did not cause sensitisation on laboratory animals., Mouse
Did not cause sensitisation on laboratory animals., Guinea pig
Repeated dose toxicity : Oral Rat: No toxicologically significant effects were found.
Inhalation Rat: No toxicologically significant effects were found.

Carcinogenicity : In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m³ of respirable TiO₂. Slight lung fibrosis was observed at 50 and 250 mg/m³ levels. Microscopic lung tumours were also observed in 13 percent of the rats exposed to 250 mg/m³, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms. In further studies, these tumours were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO₂ particles exposure was also found to be much more severe in rats than in other rodent species. In February 2006, IARC has re-evaluated Titanium dioxide as pertaining to Group 2B: "possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumours, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence. The conclusions of several epidemiology studies on more than 20000 TiO₂ industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO₂ dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO₂ dust. Based upon all available study results, DuPont scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

Mutagenicity : Did not cause genetic damage in animals. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Talc (containing no asbestos fibers) (14807-96-6)

NIOSH registry number: WW2710000
SAX toxicity evaluation: THR: Not available
Carcinogenic Status:

IARC: In 2006, IARC concluded that inhaled talc not containing asbestos or asbestiform fibers is not classifiable as a human carcinogen (Group 3).

IARC: In 2006, IARC ruled that there is limited evidence that the use of talc-based body powder for perineal dusting is a possible risk factor for ovarian cancer (Group 2B). This is not a route of exposure relevant to workers and applies only to one specific use of talc.

OSHA: Not listed

ACGIH: A4 - not classified as a human carcinogen

WHMIS: Class D-2A

NTP: Not listed. A 2-year inhalation study demonstrated clear evidence of carcinogenic activity in female rats at exposure levels of 18 mg/m³. Some evidence of carcinogenic activity was observed in male rats at the same level. No evidence of carcinogenic activity was found in mice (NTP TR-421).

Tumorigenic Data

TCLo: ihl-rat 11 mg/m³/1Y-1

TDLo: imp-rat 200 mg/kg

Other Toxicity Data: Skin and eye irritation data: skn-hmn 300 ug/3D-I MLD

Teratogenicity (reproductive effects data): Repeated ingestion of large doses of talc for 13 and 10 successive days by rabbits and mice revealed negative teratogenic and carcinogenic results

Mutation Data: Not available

Phosphoric acid, zinc salt (2:3) (7779-90-0)

Information on toxicological effects

Acute toxicity:

LD50 Oral - rat - > 5,000 mg/kg (OECD Test Guideline 401)

Inhalation: no data available

Dermal: no data available

LD50 Intraperitoneal - mouse - 552 mg/kg Remarks: Lungs, Thorax, or Respiration:Other changes.

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: Eyes - rabbit Result: No eye irritation - 72 h (OECD Test Guideline 405)

Respiratory or skin sensitisation: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Additional Information:

RTECS: TD0590000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Carbon black (1333-86-4)

Information on toxicological effects

Acute toxicity:

LD50 Oral - rat - male and female - > 8,000 mg/kg (OECD Test Guideline 401)

Inhalation: no data available

LD50 Dermal - rabbit - > 3,000 mg/kg

Skin corrosion/irritation: Skin - rabbit Result: No skin irritation - 24 h (OECD Test Guideline 404)

Serious eye damage/eye irritation: Eyes - rabbit Result: No eye irritation (OECD Test Guideline 405)

Respiratory or skin sensitisation: - guinea pig Result: Did not cause sensitisation on laboratory animals. (OECD Test Guideline 406)

Germ cell mutagenicity: Ames test *S. typhimurium* Result: negative

Hamster ovary

DNA repair rat - female

Carcinogenicity:

Carcinogenicity - rat - Inhalation:

Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors.

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This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Carbon black)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Additional Information:

RTECS: FF5800000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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ECOLOGICAL INFORMATION**Xylene (1330-20-7)**

Toxicity:

LC50: 13.5 - 17.3 mg/l (Rainbow (Donaldson) Trout (*Oncorhynchus mykiss*), 96 h)

Acute Toxicity to Aquatic Invertebrates: 600 ug/L (*Gammarus* sp., 48 h)

Toxicity to Aquatic Plants: EC50: 10 mg/l, End Point: growth (other: algae, 72 h)

Persistence and degradability: > 60 %, Exposure time: 28 d, i.e. readily biodegradable

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane (25068-38-6)

Persistence and degradability: Biodegradability Result: - According to the results of tests of biodegradability this product is not readily biodegradable. Remarks: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

Propanoic acid, 3-ethoxy-, ethyl ester (763-69-9)

Toxicity:

Toxicity to fish static test LC50 - *Pimephales promelas* (fathead minnow) - 55.3 mg/l - 96 h.

Method: OECD Test Guideline 203

static test LC50 - *Pimephales promelas* (fathead minnow) - 45.3 mg/l - 96 h

Toxicity to daphnia Immobilization EC50 - *Daphnia magna* (Water flea) - > 479.7 mg/l - 48 h.

and other aquatic Method: OECD Test Guideline 202 invertebrates

Immobilization EC50 - *Daphnia magna* (Water flea) - 785 mg/l - 48 h

Toxicity to algae Growth inhibition EC50 - *Selenastrum capricornutum* (green algae) - > 114.86 mg/l - 72 h.

Method: OECD Test Guideline 201

Toxicity to bacteria Growth inhibition IC50 - other microorganisms - > 5,000 mg/l - 16 h.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

2-Propanol, 1-methoxy-, acetate (108-65-6)

Toxicity:

Toxicity to fish mortality LC50 - *Salmo gairdneri* - 100 - 180 mg/l - 96 h.

Method: OECD Test Guideline 203

Toxicity to daphnia Immobilization EC50 - *Daphnia magna* (Water flea) - > 500 mg/l - 48 h.

and other aquatic Method: Tested according to Annex V of Directive 67/548/EEC. invertebrates

Persistence and degradability: Biodegradability Biotic/Aerobic Result: 100 % - Readily biodegradable.

Other adverse effects: Biochemical Oxygen 0.36 mg/l Demand (BOD)

Chemical Oxygen 1.74 mg/g Demand (COD)

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane (25068-38-6)

Information on ecological effects

Toxicity: no data available

Persistence and degradability: Biodegradability Result: - According to the results of tests of biodegradability this product is not readily biodegradable. Remarks: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

no data available

Benzene, 1-chloro-4-(trifluoromethyl)- (98-56-6)

AQUATIC ECOTOX DATA

Fish:

LC50 (96 hr.) (Rainbow trout) 13.5 mg/L

LC50 (96 hr.) (Bluegill sunfish) 12.0 mg/L

MATC (31 day) (Fathead minnow) >0.54 <1.4 mg/L*

*Triethylene glycol used as solvent carrier

BCF (48 hr.) (Bluegill sunfish) 121.8 & 202.0

Invertebrates:

LC50 (48 hr.) (Water flea) 12.4 mg/L

MATC (21 day) (Water flea) >0.03 < 0.05 mg/L*

*Acetone used as solvent carrier

Plants:

IC50 (72 hr.) (Green & Blue-green algae) 500 mg/L

TERRESTRIAL ECOTOX DATA

No data available

PERSISTENCE AND DEGRADABILITY

Biotic:

Biodegradation: inconclusive due to volatility

Abiotic:

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Atmospheric lifetime: estimated to be 65.9 days for OH radical reaction

Log Kow 3.7

Koc 420 - 530

Water Sol. @ 23 C 29.1

p-Chlorobenzotrifluoride (PCBTF) will preferentially partition to the atmosphere, due to its high volatility. It has been estimated that 99.93% of a 100 Kg spill would end up in the atmosphere, while only 0.06% would partition to water (M. Garlanda, 1990). The aqueous solubility of PCBTF (29.1 mg/L) would also tend to limit its potential impact to exposed aquatic systems. PCBTF has exhibited significant toxicity to aquatic species under laboratory conditions, but is unlikely to exhibit a similar degree of acute toxicity under environmental conditions due to the aforementioned solubility and volatility issues. The moderate level of bioaccumulation measured in laboratory tests will also be subject to environmental mitigation due to PCBTF's physical/chemical properties. PCBTF should rapidly volatilize from dry and moist soils. Volatility, and relative environmental partitioning characteristics, make it unlikely that PCBTF represents a significant threat to aquatic or terrestrial environments.

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Phenol, polymer with formaldehyde, glycidyl ether (28064-14-4)

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Talc (containing no asbestos fibers) (14807-96-6)

Toxicity: No data are available on this product. No specific adverse effects known.

Persistence and degradability: No data are available on this product. Product is an inorganic substance and therefore is not considered biodegradable.

Other adverse effects: No specific adverse effects known.

Phosphoric acid, zinc salt (2:3) (7779-90-0)

Acute aquatic toxicity

The Acute aquatic toxicity database on zinc contains data on 11 standard species obtained under standard testing conditions at different pH and hardness. The full analysis of these data is given in the CSR.

The reference values for acute aquatic toxicity, based on the lowest observed EC50 values of the corresponding databases at different pH and expressed as Zn²⁺ ion concentration are:

Acute toxicity for fish (*Oncorhynchus mykiss*) as zinc **LC50** (96 h) 0.14 - 2.6 mg Zn²⁺/l.

Acute toxicity for crustacea (*Ceriodaphnia dubia*) as zinc **EC50** (48 h) 0.413 mg Zn²⁺/l. for pH <7

(48 hr *Ceriodaphnia dubia* test according to US EPA 821-R-02-012 standard test protocol reference: Hyne et al 2005)

Acute toxicity for algae (*Selenastrum capricornutum*) as zinc **EC50** (72 h) 0.136- 0.150 mg Zn²⁺/l.

(=*Pseudokirchneriella subcapitata*) test according to OECD 201 standard protocol; reference: Van Ginneken, 1994)

After applying the molecular weight correction (transformation/dissolution testing is not relevant since this zinc compound is considered rather soluble), the specific reference values for acute aquatic toxicity of zinc orthophosphate is

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(applying a PZ20 Zn₃(PO₄)₂·4H₂O/Zn molecular weight ratio of 2.33 and a PZW2 Zn₃(PO₄)₂·2H₂O/Zn molecular weight ratio of 2,15):

Acute toxicity for fish (*Oncorhynchus mykiss*) as PZ20 **LC50** (96 h) 0.33 - 6.06 mg PZ20/L.

PZW2 **LC50** (96 h) 0.30 - 5.59 mg PZW2/L

Acute toxicity for crustacea (*Ceriodaphnia dubia*) as PZ20 **EC50** (48 h) 0.96 mg PZ20/L. for pH <7

PZW2 **EC50** (48 h) 0.89 mg PZW2/L. for pH <7

(48 hr *Ceriodaphnia dubia* test according to US EPA 821-R-02-012 standard test protocol reference: Hyne et al 2005)

Acute toxicity for algae (*Selenastrum capricornutum*) as PZ20 **EC50** (72 h) 0.32 mg PZ20/L.

PZW2 **EC50** (72 h) 0.29 mg PZW2/L.

(=*Pseudokirchneriella subcapitata*) test according to OECD 201 standard protocol; reference: Van Ginneken, 1994)

M Factor for this substance is 1 for an equivalent LC50 [0.1-1.0]mg/l (GHS or 1272/2008/EC regulation).

Chronic aquatic toxicity:

Freshwater: The chronic aquatic toxicity database on zinc contains high quality chronic NOEC/EC10 values on 23 species (8 taxonomic groups) obtained under a variety of conditions. These data, outlined in the CSR, were compiled in a species sensitivity distribution, from which the PNEC was derived (expressed as Zn²⁺ ion concentration). This PNEC is an added value, i.e. it is to be added to the zinc background in water, see table below.

Marine water: The chronic aquatic toxicity database on zinc contains high quality chronic NOEC/EC10 values on 39 species (9 taxonomic groups) obtained under a variety of conditions. These data, outlined in the CSR, were compiled in a species sensitivity distribution, from which the PNEC was derived (expressed as Zn²⁺ ion concentration). This PNEC is an added value, to be added on the zinc background in water, see table below.

Sediment toxicity: The chronic toxicity of zinc to sediment organisms in the freshwater was assessed based on a database containing high quality chronic NOEC/EC10 values on 7 benthic species obtained under a variety of conditions. These data, outlined in the CSR, were compiled in a species sensitivity distribution, from which the PNEC was derived (expressed as total Zn contained in the sediment). This PNEC is an added value, to be added on the zinc background in the sediment, see table below. For the marine sediments, a PNEC was derived using the equilibrium partitioning approach, see table below.

Soil toxicity: The chronic toxicity of zinc to soil organisms was assessed based on a database containing high quality chronic NOEC/EC10 values on 18 plant species, 8 invertebrate species and 17 microbial processes, obtained under a variety of conditions. These data, outlined in the CSR, were compiled in a species sensitivity distribution, from which the PNEC was derived (expressed as total Zn contained in the soil). This PNEC is an added value, to be added on the zinc background in the soil, see table below.

Toxicity to micro-organisms in STP: The PNEC for STP was derived by applying an assessment factor to the lowest relevant toxicity value: 5,2mg Zn/l (Dutka et al., 1983)

Persistence and biodegradability: Zinc is an element, and as such the criterion "persistence" is not relevant for the metal and its inorganic compounds in a way as it is applied to organic substances. An analysis on the removal of zinc from the water column has been presented as a surrogate for persistence. The rapid removal of zinc from the water column is documented in the CSR. So, zinc and zinc compounds do not meet this criterion, neither.

Behaviour in the environmental compartments

Bioaccumulative potential: Zinc is a natural, essential element, which is needed for the optimal growth and development of all living organisms, including man. All living organisms have homeostasis mechanisms that actively regulate zinc uptake and absorption/excretion from the body; due to this regulation, zinc and zinc compounds do not bioaccumulate or biomagnify.

Mobility in soils: For zinc (like for other metals) the transport and distribution over the different environmental compartments e.g. the water (dissolved fraction, fraction bound to suspended matter), soil (fraction bound or complexed to the soil particles, fraction in the soil pore water,...) is described and quantified by the metal partition coefficients between these different fractions. In the CSR, a solids-water partitioning coefficient of 158.5 l/kg (log value 2.2) was applied for zinc in soils (CSR zinc 2010).

Results of PBT and vPvB assessment: Zinc and zinc compounds are not PBT or vPvB.

Others lasting effects: No further relevant information available

Carbon black (1333-86-4)

Information on ecological effects

Toxicity:

Toxicity to fish LC50 - Danio rerio (zebra fish) - > 1,000 mg/l - 96 h.

Toxicity to daphnia and static test EC50 - Daphnia magna (Water flea) - > 5,600 mg/l - 24 h.

other aquatic (OECD Test Guideline 202) invertebrates

Toxicity to algae static test EC50 - Desmodesmus subspicatus (green algae) - > 10,000 mg/l - 72 h (OECD Test Guideline 201)

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: no data available

13	DISPOSAL CONSIDERATIONS
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14	TRANSPORT INFORMATION
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UN1263, Paint, 3, PGIII

IATA

UN/ID No. : UN1263

Proper shipping name :Paint

Class or Division : 3

Packing group : III

Label(s) : 3

RQ Substance : Yes

IMDG

UN/ID No. : UN1263

Proper shipping name :Paint

Class or Division : 3

Packing group : III

Label(s) : 3

RQ Substance : Yes

15	REGULATORY INFORMATION
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Component (CAS#) [%] - CODES

 RQ(100LBS), Xylene (1330-20-7) [5-10%] CERCLA, CSWHS, EPCRAWPC, HAP, MASS, NJHS, OSHAWAC, PA, SARA313, TOXICRCRA, TSCA, TXAIR, TXHWL

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane (25068-38-6) [20-30%] TSCA

Propanoic acid, 3-ethoxy-, ethyl ester (763-69-9) [0-1%] TSCA

Benzene, 1-chloro-4-(trifluoromethyl)- (98-56-6) [16-19%] TSCA

2-Propanol, 1-methoxy-, acetate (108-65-6) [7-10%] TSCA

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Phenol, polymer with formaldehyde, glycidyl ether (28064-14-4) [1-5%] TSCA
 Titanium oxide (TiO₂) (13463-67-7) [5-10%] MASS, OSHAWAC, PA, TSCA, TXAIR
 Talc (containing no asbestos fibers) (14807-96-6) [10-15%] MASS, OSHAWAC, PA, TSCA, TXAIR
 Phosphoric acid, zinc salt (2:3) (7779-90-0) [10-20%] TSCA

Regulatory CODE Descriptions

RQ = Reportable Quantity
 CERCLA = Superfund clean up substance
 CSWHS = Clean water Act Hazardous substances
 EPCRAWPC = EPCRA Water Priority Chemicals
 HAP = Hazardous Air Pollutants
 MASS = MA Massachusetts Hazardous Substances List
 NJHS = NJ Right-to-Know Hazardous Substances
 OSHAWAC = OSHA Workplace Air Contaminants
 PA = PA Right-To-Know List of Hazardous Substances
 SARA313 = SARA 313 Title III Toxic Chemicals
 TOXICRCRA = RCRA Toxic Hazardous Wastes (U-List)
 TSCA = Toxic Substances Control Act
 TXAIR = TX Air Contaminants with Health Effects Screening Level
 TXHWL = TX Hazardous Waste List

16	OTHER INFORMATION
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