



# SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY INFORMATION

Product Name(s): V4138 PART B  
 Product Code(s): V4138-1 Part B, V4138-Q Part B  
 Uses: HVAC vertical fire retardant coating and related.  
 Company: Controlled Release Technologies, Inc.  
 Address: 1016 Industry Drive; Shelby, NC 28152; USA  
 Telephone Number: (704) 487-0878 Fax Number: (704) 487-0877  
 Emergency Telephone Number: ChemTel Inc. 1- (800) 255-3924; + 01 (813) 248-0585 (International)  
 Date Issued: March 31, 2015 Date Revised: March 31, 2015

This SDS complies with the OSHA Hazard Communication Standard 29CFR1910.1200 as revised in May 2012 (GHS). It may not meet requirements in other countries.

## SECTION 2 HAZARDS IDENTIFICATION

GHS Classification: **DANGER**  
 Flammable Liquid (Category 3)  
 Carcinogen (Category 1)  
 Mutagen (Category 1)  
 Reproductive Toxin (Category 2)  
 Skin Irritation (Category 1)  
 Respiratory Sensitization (Category 1)  
 Single Exposure (Category 3)  
 Repeated Exposure (Category 2)  
 Skin Sensitization (Category 1)  
 Aquatic Chronic Toxicity (Category 2)



GHS Hazard Statements: Flammable liquid and vapor  
 May cause cancer  
 May cause genetic defects  
 Suspected of damaging fertility or the unborn child  
 Causes severe skin burns and eye damage  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
 May cause drowsiness or dizziness  
 May cause damage to organs <ovary, oviduct, adrenal glands> through prolonged or repeated exposure <oral>  
 May cause an allergic skin reaction  
 Toxic to aquatic life with long lasting effects

GHS Precautionary Statements: **Prevention:**  
 Keep away from heat/sparks/open flames/hot surfaces.– No smoking.  
 Keep container tightly closed.  
 Ground/Bond container and receiving

**Response:**  
 In case of fire: Use water spray/dry chemical/ carbon dioxide/foam to extinguish.  
 If exposed or concerned: Get medical advice/attention.

**SECTION 2 HAZARDS IDENTIFICATION**

equipment.  
 Use explosion-proof electrical/ventilating/lighting/equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 Wash hands/skin thoroughly after handling.  
 Use only outdoors or in a well-ventilated area.  
 Do not breathe mist/vapors/spray.  
 Contaminated work clothing must not be allowed out of the workplace.  
 Avoid release to the environment

Storage:  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.

Disposal:  
 Dispose of contents/container in accordance with local/regional/national/international regulations.

GHS Assessment:  
 Approximately 22% of this mixture consists of ingredient(s) of unknown acute toxicity.  
 Approximately 63% of the mixture consists of ingredient(s) of unknown hazards to the aquatic environment.

If swallowed: Rinse mouth. Do NOT induce vomiting.  
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 If on skin: Wash with plenty of water/soap.  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.  
 Wash contaminated clothing before reuse.  
 Collect spillage.

**SECTION 3 COMPOSITION / INGREDIENTS**

Component	CAS Number	EC Number	Concentration
Benzenemethanol	100-51-6	202-859-9	1 - 10%
Polyamine	Proprietary	---	5 - 15%
Triethylene tetramine	112-24-3	203-950-6	0.1 - 1%
Salicylic acid	69-72-7	200-712-3	0.1 - 2%
Bisphenol A	80-05-7	201-245-8	0.1 - 2%
Triethanolamine	102-71-6	203-049-8	1 - 5%
Piperazine	110-85-0	203-808-3	0.1 - 1%
Propylamine, 3-(triethoxysilyl)-	919-30-2	213-048-4	1 - 5%
Propylated triphenyl phosphate	68937-41-7	273-066-3	10 - 25%
Triphenyl phosphate	115-86-6	204-112-2	5 - 15%
Isopropyl alcohol	67-63-0	200-661-7	1 - 10%

**SECTION 3 COMPOSITION / INGREDIENTS**

Mica	12001-26-2	601-648-2	10 - 20%
Titanium dioxide	13463-67-7	236-675-5	15 - 30%
Solvent naphtha, petroleum, light aromatic	64742-95-6	265-199-0	0.1 - 2%
Amorphous silica	112926-00-8	601-214-2	1 - 5%
Silicon dioxide quartz	14808-60-7	238-878-4	1 - 5%
Trimethylbenzene, 1,2,4-	95-63-6	202-436-9	0.1 - 1%

Trade Secret Claims: Specific chemical identity and/or exact percentage (concentration) of components has been withheld as a trade secret.

**SECTION 4 FIRST AID MEASURES**

- First Aid - Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention, if irritation develops.
- First Aid - Skin: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately if irritation or rash develops and/or persists. Wash contaminated clothing before reuse.
- First Aid - Ingestion: If swallowed and feel unwell, call a physician or poison control center. DO NOT induce vomiting unless directed to do so by a physician or poison control center. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
- First Aid - Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
- Important Symptoms / Effects – Acute and Delayed: Tissue redness/irritation, tissue ulceration/damage, rash, nausea, breathing difficulty.
- Advice to Physician: Treat symptomatically.

**SECTION 5 FIRE FIGHTING MEASURES**

- Extinguishing Media: Treat surrounding material. Water spray, dry chemical, carbon dioxide, or foam is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.
- Specific Hazards: This product is flammable. This product may give rise to hazardous vapors in a fire. Vapors/fumes may be irritating, corrosive and/or toxic.
- Protective equipment and procedures for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.
- Additional Advice: None.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

- Spill Procedures: Wipe up spills with an absorbent towel/material and transfer into suitable containers for recovery or disposal. Finally clean up residual with an appropriate solvent (e.g. acetone), as this product is not soluble in water.
- Personal Precautions: Wear suitable protective clothing.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Environmental Precautions: Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

**SECTION 7 HANDLING AND STORAGE**

Handling: Ground and bond all equipment, vessels, and containers associated with processing and use of this solution. Wear appropriate personal protection (See Section 8) when handling this material. The work area must be equipped with a safety shower and eye wash station. If exposed to the solution, avoid contact with skin and eyes. Wash thoroughly after handling solution.

Storage: Keep container(s) tightly closed. Use and store this material at temperatures between 15.5 and 26.7°C (60-80°F) away from sources of ignition, heat, direct sunlight and hot metal surfaces. Keep from freezing. Keep away from any incompatible materials (see Section 10).

Additional Advice: Store in original container. Store as directed by the manufacturer.

**SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION**

Occupational Exposure Standards: Exposure limits are listed below, if they exist.

Benzenemethanol:	AIHA WEEL: 10 ppm 8 h TWA.
Polyamine:	None.
Triethylene tetramine:	AIHA WEEL: 1 ppm TWA.
Salicylic acid:	None.
Bisphenol A:	Germany (MAK): 5 mg/m <sup>3</sup> TWA. Germany (MAK): 5 mg/m <sup>3</sup> STEL.
Triethanolamine:	ACGIH TLV: 5 mg/m <sup>3</sup> TWA.
Piperazine:	EU: 0.1 mg/m <sup>3</sup> TWA. EU: 0.3 mg/m <sup>3</sup> STEL.
Propylamine, 3-(triethoxysilyl)-:	None.
Propylated triphenyl phosphate:	None.
Triphenyl phosphate:	OSHA PEL: 3 mg/m <sup>3</sup> TWA.
Isopropyl alcohol:	ACGIH TLV: 200 ppm TWA. ACGIH: 400 ppm STEL. UK: 400 ppm TWA. UK: 500 ppm STEL. OSHA PEL: 400 ppm (980 mg/m <sup>3</sup> ) TWA.
Mica:	ACGIH TLV: 3 mg/m <sup>3</sup> TWA (respirable). UK: 0.8 mg/m <sup>3</sup> TWA (respirable). NIOSH REL: 3 mg/m <sup>3</sup> TWA (respirable). OSHA PEL: 20 mppcf TWA (respirable).
Titanium dioxide	ACGIH TLV: 3 mg/m <sup>3</sup> TWA (respirable). ACGIH TLV: 10 mg/m <sup>3</sup> TWA (inhalable). UK: 4 mg/m <sup>3</sup> TWA (respirable). UK: 10 mg/m <sup>3</sup> TWA (total inhalable). OSHA PEL: 15 mg/m <sup>3</sup> TWA (total dust).

## SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Solvent naphtha, petroleum, light aromatic:	NIOSH TLV: 350mg/m <sup>3</sup> TWA. NIOSH: 1800 mg/m <sup>3</sup> STEL. OSHA PEL: 500 ppm (2000 mg/m <sup>3</sup> ) TWA (as petroleum distillates - naphtha).
Amorphous silica:	NIOSH: 6 mg/m <sup>3</sup> TWA. ACGIH TLV: 3 mg/m <sup>3</sup> TWA (respirable). ACGIH TLV: 10 mg/m <sup>3</sup> TWA (inhalable). UK: 1.2 mg/m <sup>3</sup> TWA (respirable). OSHA: 20 mpcf.
Silicon dioxide quartz:	ACGIH TLV: 0.05 mg/m <sup>3</sup> TWA (respirable). UK: 0.3 mg/m <sup>3</sup> TWA (respirable). NIOSH REL: 0.05 mg/m <sup>3</sup> (respirable). OSHA PEL: [10 mg/m <sup>3</sup> ]/[% SiO <sub>2</sub> +2] (respirable). OSHA PEL: [30 mg/m <sup>3</sup> ]/[% SiO <sub>2</sub> +2] (total).
Trimethylbenzene, 1,2,4-:	NIOSH TLV: 25 ppm (125mg/m <sup>3</sup> ) TWA. ACGIH TLV: 25 ppm TWA. EU: 20 ppm (100mg/m <sup>3</sup> ) TWA. UK: 25ppm TWA.
Engineering Control Measures:	Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.
Respiratory Protection:	A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits.
Hand Protection:	The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation and skin damage (see glove manufacturer literature for information on permeability).
Eye Protection:	Approved eye protection (safety glasses with side-shields or goggles) to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.
Body Protection:	Impervious clothing should be worn as needed to prevent skin contact.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	White
Odor:	Characteristic
Odor Threshold:	5.5 ppm (Benzenemethanol) 22 ppm (Isopropyl alcohol)
pH:	Not available.
Melting Point/Range (°C/°F):	Not available.
Boiling Point/Range (°C/°F):	> 80°C / 176°F
Flash Point (PMCC) (°C/°F):	ca. 48°C / 118.4°F
Evaporation Rate:	Not available.
Flammability / Explosivity Limits in Air (%):	Not available.
Vapor Pressure:	45.4 mmHg (20°C) (Isopropyl alcohol)
Vapor Density (Air = 1):	Not available.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Relative Density:	1.5 g/cm <sup>3</sup> (23.8°C)
Solubility in Water:	Partly soluble.
Partition Coefficient:	Not available.
Autoignition Temperature (°C/°F):	> 399°C / 750.2°F
Decomposition Temperature (°C/°F):	Not available.
Viscosity:	Not available.
Explosive Properties:	None.
Oxidizing Properties:	None.
Volatile Organic Content (VOC) (g/l):	ca. 530 - 600 g/l (as defined by 40CFR51.100)

**SECTION 10 STABILITY AND REACTIVITY**

Reactivity:	Product will not undergo additional reaction.
Stability:	Stable under normal storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	Contact with incompatible materials, excessive heat.
Incompatibilities:	Oxidizing agents, strong acids.
Hazardous Decomposition Products:	Oxides of carbon, oxides of nitrogen, oxides of phosphorus, oxides of silicon, amines, aliphatic and aromatic compounds, metal oxides, toxic by-products.

**SECTION 11 TOXICOLOGICAL INFORMATION**

*If available, toxicity data for the product is given; otherwise component data is listed.*

Acute Toxicity:	This product is not expected to be appreciably toxic. (Benzenemethanol) Oral LD50 (rat) 1230 mg/kg; Dermal LD50 (rabbit) 2000 mg/kg; Inhalation LC50 (rat) 74.178 mg/l (4 hr) (Polyamine) No data. (Triethylene tetramine) Oral LD50 (rat) 2500 mg/kg; Dermal LD50 (rabbit) 805 mg/kg (Salicylic acid) Oral LD50 (rat) 891 mg/kg; Dermal LD50 (rat) > 2000 mg/kg (Bisphenol A) Oral LD50 (rat) 3300 mg/kg; Dermal LD50 (rabbit) 3600 mg/kg (Triethanolamine) Oral LD50 (rat) 8 g/kg; Dermal LD50 (rabbit) > 20,000 mg/kg (Piperazine) Oral LD50 (rat) 2050 mg/kg; Dermal LD50 (rabbit) 8300 mg/kg; Inhalation LC0 (rat) 2 mg/l (4 hr) (Propylamine, 3-(triethoxysilyl)-) Oral LD50 (rat) 1780 mg/kg; Dermal LD50 (rabbit) 4000 mg/kg; Inhalation LC50 (rat) > 7.35 mg/l (4 hr) (Propylated triphenyl phosphate) Oral LD50 (rat) > 2000 mg/kg; Dermal LD50 (rabbit) > 10000 mg/kg; Inhalation LD50 (rat) > 200 mg/l (14 day) (Triphenyl phosphate) Oral LD50 (rat) 3800 mg/kg; Dermal LD50 (rabbit) > 7900 mg/kg (Isopropyl alcohol) Oral LD50 (rat) 4.7 g/kg; Dermal LD50 (rabbit) 12.9 g/kg; Inhalation LC50 (rat) 19,000 ppm (8 hr) (Mica) Oral LD50 (rat) > 22,500 mg/kg (silica) (Titanium dioxide) Oral LD50 (rat) > 10,000 mg/kg; Dermal LD50 (rabbit) > 10,000 mg/kg; Inhalation LC50 (rat) > 6.8 mg/l (4 hr) (Solvent naphtha, petroleum, light aromatic) Oral LD50 (rat) > 5000 mg/kg; Dermal LD50 (rabbit) >2000 mg/kg; Inhalation LC50 (rat) >5.2 mg/l (4 hr) (Amorphous silica) Oral LD50 (rat) > 22,500 mg/kg
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Skin Corrosion / Irritation:	<p>(Silicon dioxide quartz) Intravenous LD50 (rat) 500 mg/kg          (Trimethylbenzene, 1,2,4-) Oral LD50 (rat) 3280 mg/kg; Dermal LD50 (rabbit) &gt; 3160 mg/kg; Inhalation LC50 (rat) &gt;2000 ppm (48 hr)</p> <p>The product is expected to be corrosive to the skin.          (Benzenemethanol) Moderately irritating to skin (rabbit).          (Polyamine) May be corrosive to skin.          (Triethylene tetramine) Corrosive to skin (rabbit).          (Salicylic acid) Non-irritating to skin (rabbit).          (Bisphenol A) Moderately irritating to skin (rabbit).          (Triethanolamine) Mildly irritating to skin (&gt; 5%) (human).          (Piperazine) Corrosive to skin (rabbit).          (Propylamine, 3-(triethoxysilyl)-) Corrosive to skin (rabbit).          (Propylated triphenyl phosphate) Non-irritating to skin (rabbit).          (Triphenyl phosphate) Non-irritating to skin (rabbit).          (Isopropyl alcohol) Application to animal skin produced negligible irritation.          (Mica) No data.          (Titanium dioxide) Irritating to skin (human).          (Solvent naphtha, petroleum, light aromatic) Moderately irritating to skin (rabbits).          (Amorphous silica) No data.          (Silicon dioxide quartz) No data.          (Trimethylbenzene, 1,2,4-) Moderately irritating to skin (rabbit).</p>
Serious Eye Damage / Irritation:	<p>The product is expected to be corrosive to the eyes.          (Benzenemethanol) Moderately to severely irritating to eyes (rabbits).          (Polyamine) May be corrosive to eyes.          (Triethylene tetramine) Severely irritating to eyes (rabbit).          (Salicylic acid) Severe eye irritant (rabbit).          (Bisphenol A) Irritating to eyes with persistent corneal opacity (rabbit).          (Triethanolamine) Moderately irritating to eye (rabbit).          (Piperazine) No data.          (Propylamine, 3-(triethoxysilyl)-) Caused corneal injury (rabbit).          (Propylated triphenyl phosphate) Non-irritating to eye (rabbit).          (Triphenyl phosphate) Non-irritating to eye (rabbit).          (Isopropyl alcohol) Moderately to severely irritating to eyes (rabbit).          (Mica) Irritating to eyes (silica).          (Titanium dioxide) No data.          (Solvent naphtha, petroleum, light aromatic) Slightly irritating to eyes (rabbit).          (Amorphous silica) Irritating to eyes.          (Silicon dioxide quartz) No data.          (Trimethylbenzene, 1,2,4-) Irritating to eyes</p>
Respiratory or Skin Sensitization:	<p>The product may be dermally sensitizing. This product may be a respiratory sensitizer.          (Benzenemethanol) Not generally sensitizing to skin (guinea pigs – Draize and maximization testing); however, sensitization has occurred by the Freund's Complete Adjuvant Test and the Open Epicutaneous Test.          (Polyamine) No data.          (Triethylene tetramine) Sensitizing in guinea pigs. Skin sensitization reported in humans.          (Salicylic acid) Not dermally sensitizing (mouse local lymphnode assay).          (Bisphenol A) Slightly sensitizing (guinea pig). Sensitizing in mouse ear swelling photoallergy test. Reported to be a photosensitizer in human and mice subjects, but not guinea pigs.          (Triethanolamine) May occasionally cause dermal sensitization in certain individuals (human). The risk of skin sensitization seems to be very low.          (Piperazine) Caused dermal sensitization (guinea pig).          (Propylamine, 3-(triethoxysilyl)-) No data.          (Propylated triphenyl phosphate) Inconclusive in a mouse lymph node assay;</p>

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however, the class of materials are not expected to cause sensitization.  
 (Triphenyl phosphate) Non-sensitizing (guinea pig).  
 (Isopropyl alcohol) No data.  
 (Mica) No data.  
 (Titanium dioxide) No data.  
 (Solvent naphtha, petroleum, light aromatic) Not sensitizing in guinea pigs.  
 (Amorphous silica) Not expected to be sensitizing to skin.  
 (Silicon dioxide quartz) No data.  
 (Trimethylbenzene, 1,2,4-) Not sensitizing in guinea pig maximization test.

**Mutagenicity:**

This product may be mutagenic.  
 (Benzenemethanol) Negative Ames and replicative DNA synthesis test results, but equivocal results in sister chromatid exchange.  
 (Polyamine) No data.  
 (Triethylene tetramine) Mutagenic in Ames testing and in UDS Rat Hepatocytes. Negative for mutagenicity in Chinese Hamster Ovary systems.  
 (Salicylic acid) Not mutagenic (Ames and mammalian chromosome aberration test systems). Did not cause DNA damage in mice.  
 (Bisphenol A) Not genotoxic in Ames, E. coli, chromatic exchange and chromosomal aberration testing.  
 (Triethanolamine) Not mutagenic (Ames, E.coli and chromosomal aberration testing in Chinese hamster cell test systems).  
 (Piperazine) Not mutagenic (Ames, mammalian cell transformation and CHO test systems).  
 (Propylamine, 3-(triethoxysilyl)-) Not mutagenic (Ames test system).  
 (Propylated triphenyl phosphate) Not mutagenic (Ames and chromosome aberration test systems).  
 (Triphenyl phosphate) Not mutagenic (Ames). Not clastogenic for mammalian cells in vitro. Negative in inducing unscheduled DNA synthesis.  
 (Isopropyl alcohol) Not genotoxic in a variety of tests.  
 (Mica) No data.  
 (Titanium dioxide) Not genotoxic in Ames and Syrian hamster embryo cell testing.  
 (Solvent naphtha, petroleum, light aromatic) No evidence of mutagenicity (Ames and Chinese Hamster Ovary cells). Positive response was found for unscheduled DNA synthesis in liver cells.  
 (Amorphous silica) No data.  
 (Silicon dioxide quartz) Observed genotoxic effects in lung cells suggest particle biopersistence, solubility, and direct or indirect epithelial cell cytotoxicity may be key factors for the induction of either mutagenic events or target cell death.  
 (Trimethylbenzene, 1,2,4-) Not genotoxic in Ames testing. Inadequate evidence in sister chromatid exchange testing.

**Carcinogenicity:**

This product may be carcinogenic.  
 (Benzenemethanol) No evidence of carcinogenic activity for male or female mice dosed with 100 or 200 mg/kg for 2 years.  
 (Polyamine) No data.  
 (Triethylene tetramine) No data.  
 (Salicylic acid) Did not induce cancer in laboratory animals (rat).  
 (Bisphenol A) No convincing evidence of carcinogenicity.  
 (Triethanolamine) No dose related increase of the incidence of any tumor was seen in mice during a drinking water study (2% over 82 weeks).  
 (Piperazine) Did not induce a significant increase in the incidence of lung adenomas in a 28 week study in mice (oral).  
 (Propylamine, 3-(triethoxysilyl)-) No data.  
 (Propylated triphenyl phosphate) No data.  
 (Triphenyl phosphate) No indication of a carcinogenic potential in mice by



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	injection.
	(Isopropyl alcohol) Not an animal carcinogen.
	(Mica) Inadequate evidence for carcinogenicity in experimental animals and humans (silica).
	(Titanium dioxide) Limited evidence for carcinogenicity in animals. There is inadequate evidence in humans. Studies related to inhalation of airborne particles.
	(Solvent naphtha, petroleum, light aromatic) Not carcinogenic (2 year mouse study). Substance may act as a kidney tumor promotor in male rats. Female mice exposed to mists over 2 years developed statistically significant liver tumors. Inadequate relevance to humans.
	(Amorphous silica) Inadequate evidence for carcinogenicity in experimental animals and humans.
	(Silicon dioxide quartz) Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC).
	(Trimethylbenzene, 1,2,4-) No data.
Reproductive /	This product may be reproductively harmful.
Developmental Toxicity:	(Benzenemethanol) No teratogenic effects were noted in intraperitoneal administered rats. Generally, not observed to be reproductively or developmentally toxic; however, there have been a couple of animal studies, which showed some limited evidence.
	(Polyamine) No data.
	(Triethylene tetramine) No data.
	(Salicylic acid) In a multi-generational study the following NOAEL were determined: 250 mg/kg/day (parental), 250 mg/kg/day (reproduction) and 75 mg/kg/day (development). Was found to be embryotoxic in rats and induced malformations at maternally toxic doses.
	(Bisphenol A) No embryotoxicity or effects on fertility observed in a one generation mouse and rat studies. In a continuous breeding study, litter size and sperm motility was reduced. Teratogenicity was equivocal or not apparent in animal studies.
	(Triethanolamine) Did not produce a significant increase in the incidence of malformations (chick embryos).
	(Piperazine) An NOAEL of 125 mg/kg/day was established, with decreased litter size as the main effect (two generation study – rat). No evidence of teratogenicity was found in orally fed rats.
	(Propylamine, 3-(triethoxysilyl)-) The occurrence of maternal toxicity at 600 mg/kg/day was accompanied by slight fetal toxicity, as exhibited by 27 presacral vertebrae and sternebra unossified. The maternal and developmental NOAEL was 100 mg/kg/day.
	(Propylated triphenyl phosphate) Poor reproductive performance was observed in orally-fed rats. Organ weight effects were seen for the adrenals and liver and fatty changes were observed in the adrenals of males and females.
	(Triphenyl phosphate) Fertility was not adversely affected in rats (parental NOEL was 690 mg/kg).
	(Isopropyl alcohol) Does not produce adverse effects on reproduction and it is not a teratogen.
	(Mica ) Reproductive or developmental toxicity was not observed in laboratory animals (silica).
	(Titanium dioxide) No data.
	(Solvent naphtha, petroleum, light aromatic) No significant reproductive toxicity was found in a 2 or 3 generation rat inhalation studies. No evidence of developmental toxicity or teratogenicity. Effects were only noted at near lethal toxicity levels (1500ppm).
	(Amorphous silica) Reproductive or developmental toxicity was not observed in laboratory animals.
	(Silicon dioxide quartz) No data.

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	(Trimethylbenzene, 1,2,4-) No evidence of embryo-lethal or teratogenic effects following inhalation exposure was observed in rats.
Chronic/Subchronic Toxicity: Specific Target Organ/Systemic Toxicity – Single Exposure:	(Benzenemethanol) Central nervous system depression has been observed in rabbits. (Polyamine) No data. (Triethylene tetramine) No data. (Salicylic acid) No data. (Bisphenol A) No data. (Triethanolamine) Transient liver injury has been observed in animal studies. (Piperazine) No data. (Propylamine, 3-(triethoxysilyl)-) In studies involving rabbits and rats, kidney injury occurred by dermal and oral exposures. (Propylated triphenyl phosphate) No data. (Triphenyl phosphate) No data. (Isopropyl alcohol) May cause transient central nervous system depression. (Mica ) No data. (Titanium dioxide) No data. (Solvent naphtha, petroleum, light aromatic) No data. (Amorphous silica) No data. (Silicon dioxide quartz) No data. (Trimethylbenzene, 1,2,4-) Inhalation exposures showed concentration-dependent disturbances in rotarod performance, decrease in pain sensitivity in rats and depression of respiratory rate in mice.
Chronic/Subchronic Toxicity: Specific Target Organ/Systemic Toxicity – Repeated Exposure:	(Benzenemethanol) Orally dosed rats have shown central nervous system effects as well as the development of hemorrhages around the mouth and nose and lesions in the brain, thymus, skeletal muscle and kidneys at the higher doses. Liver and blood cells have also been effected. (Polyamine) No data. (Triethylene tetramine) No data. (Salicylic acid) No data. (Bisphenol A) Orally dosed rats at 520 mg/kg/day produced no adverse effects over the 90-day study. Inhalation studies have shown toxicity to the upper respiratory tract. (Triethanolamine) Kidney toxicity was observed in orally fed mice. (Piperazine) Did not provoke adverse effects in a 30 day study up to 66 mg/kg/day (rat). Doses of 1 and 3% caused moderate liver and kidney pathological effects in a 90 day study (rat). (Propylamine, 3-(triethoxysilyl)-) The NOAEL in a 90-day oral study with rats was 200 mg/kg bw/day. (Propylated triphenyl phosphate) In orally-administered rats, reproductive performance and postnatal development was adversely affected at dose levels of 100 and 400 mg/kg/day. (Triphenyl phosphate) No data. (Isopropyl alcohol) Changes in the liver and kidneys have been noted. (Mica ) Pneumoconiosis has been observed in workers where airborne dusts have been present. (Titanium dioxide) No data. (Solvent naphtha, petroleum, light aromatic) No pathologic changes or permanent neurotoxic effects were noted in rats exposed to mist. Renal effects were found, but determined not to be generally relevant to humans. (Amorphous silica) No data. (Silicon dioxide quartz) No data. (Trimethylbenzene, 1,2,4-) No data.
Aspiration Hazard:	This product is not expected to be an aspiration hazard.
Additional Information:	None.

<b>SECTION 12 ECOLOGICAL INFORMATION</b>
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*If available, ecological data for the product is given; otherwise component data is listed.*

Acute Ecotoxicity:	<p>This product is expected to be toxic to aquatic species.</p> <p>(Benzenemethanol) LC50 (fathead minnow) 460 mg/l/96h; EC50 (algae) 2600 mg/l/24 hr</p> <p>(Polyamine) No data.</p> <p>(Triethylene tetramine) No data.</p> <p>(Salicylic acid) EC50 (Daphnia magna) 870 mg/l/48 hr.</p> <p>(Bisphenol A) LC50 (Fathead minnow) 4600 ug/l/48 hr; EC50 (algae) 2.7 mg/l/96 hr; EC50 (Daphnia magna) 10200 ug/l/48 hr</p> <p>(Triethanolamine) LC50 (fathead minnow) 11.8 mg/l/96 hr; EC50 (green algae) 470 mg/l/48 hr; EC50 (Daphnia magna) 610 mg/l/48 hr.</p> <p>(Piperazine) LC50 (guppy) &gt; 1800 mg/l/96 hr; EC50 (Daphnia magna) 21 mg/l/48 hr.</p> <p>(Propylamine, 3-(triethoxysilyl)-) LC50 (fish) 934 mg/l/96 hr; EC50 (Daphnia magna) 331 mg/l/48 hr.</p> <p>(Propylated triphenyl phosphate) LC50 (fathead minnow) 50.1 mg/l/96 hr; LC50 (Rainbow trout) 1.6 mg/l/96 hr; LC50 (Daphnia magna) 1.5 mg/l/48 hr; EC50 (algae) &gt; 2.5 mg/l/72 hr.</p> <p>(Triphenyl phosphate) LC50 (Rainbow trout) 0.4 mg/l/96 hr; EC50 (Daphnia magna) 1.0 mg/l/48 hr.</p> <p>(Isopropyl alcohol) LC50 (fathead minnows) 6.12 g/l/96 hr.</p> <p>(Mica) No data.</p> <p>(Titanium dioxide) No data.</p> <p>(Solvent naphtha, petroleum, light aromatic) LC50 (Rainbow trout) 9.22 mg/l/96 hr; EC50 (Daphnia magna) 6.14 mg/l/48 hr; EC50 (algae) 3.29 mg/l/72 hr</p> <p>(Amorphous silica) No data.</p> <p>(Silicon dioxide quartz) No data.</p> <p>(Trimethylbenzene, 1,2,4-) LC50 (fathead minnow) 7.72 mg/l/96 hr; EC50 (Daphnia magna) 3.6 mg/l/48 hr</p>
Mobility:	<p>(Benzenemethanol) In soil, it is expected to be very highly mobile based on a Koc range of &lt;5 to 29.</p> <p>(Polyamine) No data.</p> <p>(Triethylene tetramine) No data.</p> <p>(Salicylic acid) Expected to have moderate mobility based upon an estimated Koc of 404.</p> <p>(Bisphenol A) Expected to have low mobility based upon an estimated Koc of 796.</p> <p>(Triethanolamine) Expected to have very high mobility based upon an estimated Koc of 7.</p> <p>(Piperazine) Expected to have very high mobility based upon an estimated Koc of 3.6.</p> <p>(Propylamine, 3-(triethoxysilyl)-) No data.</p> <p>(Propylated triphenyl phosphate) No data.</p> <p>(Triphenyl phosphate) No data.</p> <p>(Isopropyl alcohol) Expected to have very high mobility based upon an estimated Koc of 25.</p> <p>(Mica) No data.</p> <p>(Titanium dioxide) No data.</p> <p>(Solvent naphtha, petroleum, light aromatic) No data.</p> <p>(Amorphous silica) No data.</p> <p>(Silicon dioxide quartz) No data.</p> <p>(Trimethylbenzene, 1,2,4-) A measured Koc value of 537 suggests a low mobility in soil.</p>
Persistence/Degradability:	<p>(Benzenemethanol) An experimentally derived first-order aerobic biodegradation rate constant of 0.05 days was reported, corresponding to a half-life of about 13 days.</p>

## SECTION 12 ECOLOGICAL INFORMATION

- (Polyamine) No data.  
 (Triethylene tetramine) No data.  
 (Salicylic acid) Readily biodegradable (94% in 14 days).  
 (Bisphenol A) Less than 1% degradation in 28 days.  
 (Triethanolamine) Readily biodegradable with 73 and 78% of the ThOD being expressed after 28 and 42 days  
 (Piperazine) Degraded by greater than 51% after 28 days.  
 (Propylamine, 3-(triethoxysilyl)-) Not readily biodegradable (67% in 28 days).  
 (Propylated triphenyl phosphate) Low biodegradability (17.9% in 28-day study).  
 (Triphenyl phosphate) Readily biodegradable.  
 (Isopropyl alcohol) Readily degraded in aerobic aqueous systems.  
 (Mica) Not biodegradable.  
 (Titanium dioxide) Not biodegradable.  
 (Solvent naphtha, petroleum, light aromatic) BOD5 has been reported to be 190 mg oxygen/L; COD has been reported to be 440 mg/g substance.  
 (Amorphous silica) Inherently not biodegradable.  
 (Silicon dioxide quartz) No data.  
 (Trimethylbenzene, 1,2,4-) Limited biodegradation under aerobic conditions.
- Bioaccumulation:
- (Benzenemethanol) An estimated BCF of 0.3 suggests the potential for bioconcentration in aquatic organisms is low.  
 (Polyamine) No data.  
 (Triethylene tetramine) No data.  
 (Salicylic acid) An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.  
 (Bisphenol A) A BCF range of 5.1 to 67.7 suggests bioconcentration in aquatic organisms is low to moderate.  
 (Triethanolamine) An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.  
 (Piperazine) A BCF of less than 0.3 to 0.9 suggests bioconcentration in aquatic organisms is low.  
 (Propylamine, 3-(triethoxysilyl)-) Due to the rapid hydrolysis, bioconcentration in aquatic organisms will not be an important environmental fate process.  
 (Propylated triphenyl phosphate) Expected to have low to moderate bioaccumulative potential based on a mean BCF of 198.  
 (Triphenyl phosphate) Not bioaccumulative based on a BCF of 144.  
 (Isopropyl alcohol) Readily degraded in aerobic aqueous systems.  
 (Mica) No data.  
 (Titanium dioxide) No data.  
 (Solvent naphtha, petroleum, light aromatic) Very little incorporation into cellular material is expected.  
 (Amorphous silica) No data.  
 (Silicon dioxide quartz) No data.  
 (Trimethylbenzene, 1,2,4-) BCF values of 31-275 suggest bioconcentration in aquatic organisms is moderate to high.
- Other adverse effects: None.

## SECTION 13 DISPOSAL CONSIDERATION

- Environmental precautions: Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.
- Product Disposal: Dispose in accordance with all local, state (provincial), and federal regulations. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria

**SECTION 13 DISPOSAL CONSIDERATION**

for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

Container Disposal: Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

**SECTION 14 TRANSPORT INFORMATION**

DOT Proper Shipping Name: Flammable liquids, corrosive, n.o.s. (isopropyl alcohol, polyamine)

UN Number: UN2924

UN Class: 3, 8

UN Packaging Group: III

Reportable Quantity: None.

Marine Pollutant: This product does not contain a listed marine pollutant; however, this product will meet the criteria of a marine pollutant under the IMDG Code.

*Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Consult current IATA Regulations prior to shipping by air.*

**SECTION 15 REGULATORY INFORMATION**

US Toxic Substance Control Act: All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Canadian Domestic Substance List: One or more component(s) of this product are not listed on the Canadian Domestic List. Limited quantities may be permitted.

EU Existing Inventory of Chemical Substances: One or more component(s) of this product are not in compliance with the inventory listing requirements of the E.U. Existing Inventory of Chemical Substances (EINECS). One or more component(s) of this product have not been pre-listed under REACH. Limited quantities may be permitted.

TSCA Sec.12(b) Export Notification: This product contains a chemical at or above de minimis concentrations which requires reporting:  
- Triphenyl phosphate (Section 4 Test Rule)

Canadian WHMIS Classification: E, D.2.A, D.2.B  
This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

Massachusetts Right-To-Know: This product contains materials subject to disclosure under the Massachusetts' Right-To-Know Law:  
- Benzenemethanol  
- Triethylene tetramine  
- Bisphenol A  
- Triethanolamine  
- Piperazine  
- Triphenyl phosphate  
- Isopropyl alcohol  
- Mica  
- Titanium dioxide  
- Solvent naphtha, petroleum, light aromatic (as petroleum distillates)  
- Amorphous silica  
- Silicon dioxide quartz

<b>SECTION 15 REGULATORY INFORMATION</b>
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New Jersey Right-To-Know:	<ul style="list-style-type: none"> <li>- Trimethylbenzene, 1,2,4-</li> </ul> <p>This product contains materials subject to disclosure under the New Jersey's Right-To-Know Law:</p> <ul style="list-style-type: none"> <li>- Triethylene tetramine (1908)</li> <li>- Bisphenol A (2388)</li> <li>- Triethanolamine (4094)</li> <li>- Piperazine (1540)</li> <li>- Triphenyl phosphate (1951)</li> <li>- Isopropyl alcohol (1076)</li> <li>- Mica (1659)</li> <li>- Titanium dioxide (1861)</li> <li>- Solvent naphtha, petroleum, light aromatic (as petroleum distillates) (2648)</li> <li>- Amorphous silica (3510)</li> <li>- Silicon dioxide quartz (1660)</li> <li>- Trimethylbenzene, 1,2,4- (2716)</li> </ul>										
Pennsylvania Right-To-Know:	<p>This product contains materials subject to disclosure under the Pennsylvania's Right-To-Know Law:</p> <ul style="list-style-type: none"> <li>- Benzenemethanol</li> <li>- Triethylene tetramine</li> <li>- Bisphenol A</li> <li>- Triethanolamine</li> <li>- Piperazine</li> <li>- Triphenyl phosphate</li> <li>- Isopropyl alcohol</li> <li>- Mica</li> <li>- Titanium dioxide</li> <li>- Solvent naphtha, petroleum, light aromatic (as petroleum distillates)</li> <li>- Silicon dioxide quartz</li> <li>- Trimethylbenzene, 1,2,4-</li> </ul>										
California Proposition 65:	<p>This product contains materials which the State of California has found to cause cancer, birth defects or other reproductive harm:</p> <ul style="list-style-type: none"> <li>- Silicon dioxide quartz (respirable particles)</li> <li>- Titanium dioxide (airborne particles)</li> <li>- Diethanolamine (&lt; 0.01%)</li> <li>- Benzene (&lt; 0.002%)</li> <li>- Toluene (&lt; 0.002%)</li> </ul>										
SARA TITLE III-Section 311/312 Categorization (40 CFR 370):	Flammable, immediate (acute), delayed (chronic) hazard										
SARA TITLE III-Section 313 (40 CFR 372):	<p>This product contains materials which are listed in Section 313 at or above de minimis concentrations:</p> <ul style="list-style-type: none"> <li>- Bisphenol A</li> <li>- Trimethylbenzene, 1,2,4-</li> </ul>										
CERCLA Hazardous Substance (40 CFR 302)	This product does not contain materials subject to reporting under CERCLA and Section 304 of EPCRA.										
Water Hazard Class (WGK):	This product is slightly water-endangering (WGK=1).										
Other Chemical Inventories:	<table> <tr> <td>Australia (AICS):</td> <td>One or more component(s) not listed.</td> </tr> <tr> <td>China (IECSC):</td> <td>One or more component(s) not listed.</td> </tr> <tr> <td>Japan (ENCS):</td> <td>One or more component(s) not listed.</td> </tr> <tr> <td>Korea (KCI):</td> <td>One or more component(s) not listed.</td> </tr> <tr> <td>Philippines (PICCS):</td> <td>One or more component(s) not listed.</td> </tr> </table>	Australia (AICS):	One or more component(s) not listed.	China (IECSC):	One or more component(s) not listed.	Japan (ENCS):	One or more component(s) not listed.	Korea (KCI):	One or more component(s) not listed.	Philippines (PICCS):	One or more component(s) not listed.
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Philippines (PICCS):	One or more component(s) not listed.										

**SECTION 16 OTHER INFORMATION**

NFPA Rating - HEALTH: 3  
 NFPA Rating - FIRE: 2  
 NFPA Rating - REACTIVITY: 1  
 NFPA Rating - SPECIAL: NONE  
 SDS Date Issued: March 31, 2015  
 SDS Current Version: 1.0 Version Date: March 31, 2015  
 SDS Revision History: v1.0 Initial version.

Abbreviations:

GHS: Globally Harmonized System of Classification and Labeling of Chemicals  
 CAS#: Chemical Abstract Services Number  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 OSHA: Occupational Safety and Health Administration  
 NFPA: National Fire Protection Association  
 DOT: US Department of Transportation  
 RCRA: US Resource Conservation and Recovery Act  
 TLV: Threshold Limit Value  
 TWA: Time-Weighted Average  
 PEL: Permissible Exposure Limit  
 STEL: Short Term Exposure Limit  
 WEEL: Workplace Environmental Exposure Levels  
 AIHA: American Industrial Hygiene Association  
 NTP: National Toxicology Program  
 IARC: International Agency for Research on Cancer  
 R: Risk  
 S: Safety  
 LD50: Lethal Dose 50%  
 LC50: Lethal Concentration 50%  
 EC50: Effective Concentration 50%  
 BCF: Bioconcentration Factor  
 BOD: Biological Oxygen Demand  
 Koc: Soil Organic Carbon Partition Coefficient.  
 Tlm: Median Tolerance Limit

Key References: United States National Library of Medicine's TOXNET  
 Patty's Toxicology, 5<sup>th</sup> Edition  
 European Commission's Institute for Health and Consumer Protection  
 American Conference of Governmental Industrial Hygienists  
 International Agency for Research on Cancer  
 United States National Toxicology Program  
 United States Occupational Safety and Health Administration  
 United States Department of Transportation  
 Supplier Material Safety Data Sheets

Disclaimer: *The data contained herein is based on information that the company believes to be reliable, but no expressed or implied warranty is made with regard to the accuracy of such data or its suitability for a given situation. Such data relates only to the specific product described and not to such products in combination with any other product and no agent of the company is authorized to vary any of such data. The company and its agents disclaim all liability for any action taken or foregone on reliance upon such data.*

Prepared by: ChemOne Compliance, LLC