



## SAFETY DATA SHEET

DOW CHEMICAL COMPANY LIMITED

Safety Data Sheet according to Reg. (EU) No 2015/830

**Product name:** FROTH-PAK™ 600 Polyol QR

**Revision Date:** 28.10.2016

**Version:** 10.0

**Print Date:** 31.10.2016

DOW CHEMICAL COMPANY LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

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#### 1.1 Product identifier

**Product name:** FROTH-PAK™ 600 Polyol QR

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Identified uses:** Component for polyurethane manufacture. Thermal insulation.

#### 1.3 Details of the supplier of the safety data sheet

##### COMPANY IDENTIFICATION

DOW CHEMICAL COMPANY LIMITED  
DIAMOND HOUSE, LOTUS PARK,  
KINGSBURY CRESCENT,  
STAINES  
England  
TW18 3AG  
UNITED KINGDOM

**Customer Information Number:**

+44 (0) 203 139 4000  
SDSQuestion@dow.com

#### 1.4 EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 0031 115 694 982

**Local Emergency Contact:** 00 31 115 69 4982

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### SECTION 2: HAZARDS IDENTIFICATION

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#### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008:**

Chronic aquatic toxicity - Category 3 - H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008:**

**Product name: FROTH-PAK™ 600 Polyol QR****Revision Date: 28.10.2016****Version: 10.0****Hazard statements**

H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements**

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P501 Dispose of contents/container to hazardous or special waste collection point.

**Supplemental information**

EUH208 Contains: Dodecyl mercaptan. May produce an allergic reaction.

**2.3 Other hazards**

No data available

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.2 Mixtures**

This product is a mixture.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
<b>CASRN</b> 811-97-2 <b>EC-No.</b> 212-377-0 <b>Index-No.</b> -	01-2119459374-33	15.0 - 30.0 %	1,1,1,2- Tetrafluoroethane	Press. Gas - Liquefied gas - H280
<b>CASRN</b> Confidential <b>EC-No.</b> Polymer <b>Index-No.</b> -	-	15.0 - 30.0 %	Polyether polyol	Not classified
<b>CASRN</b> 13674-84-5 <b>EC-No.</b> 237-158-7 <b>Index-No.</b> -	01-2119486772-26	15.0 - < 25.0 %	Tris(1-chloro-2- propyl) phosphate	Acute Tox. - 4 - H302

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<b>CASRN</b> Not available <b>EC-No.</b> Polymer <b>Index-No.</b> —	—	10.0 - 20.0 %	Polyester polyol	Not classified
<b>CASRN</b> 111-46-6 <b>EC-No.</b> 203-872-2 <b>Index-No.</b> 603-140-00-6	01-2119457857-21	2.5 - < 5.0 %	2,2'-oxybisethanol	Acute Tox. - 4 - H302 STOT RE - 2 - H373
<b>CASRN</b> 78-40-0 <b>EC-No.</b> 201-114-5 <b>Index-No.</b> 015-013-00-7	01-2119492852-28	1.0 - < 2.5 %	Triethyl phosphate	Acute Tox. - 4 - H302 Eye Irrit. - 2 - H319
<b>CASRN</b> 3164-85-0 <b>EC-No.</b> 221-625-7 <b>Index-No.</b> —	—	1.0 - < 2.5 %	2-Ethylhexanoic acid potassium salt	Eye Irrit. - 2 - H319 Repr. - 2 - H361 Aquatic Chronic - 3 - H412

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components.

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

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

**4.2 Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

#### **4.3 Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. Due to structural analogy and clinical data, this material may have a mechanism of intoxication similar to ethylene glycol. On that basis, treatment similar to ethylene glycol intoxication may be of benefit. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. Cholinesterase inhibition has been noted in human exposure but is not of benefit in determining exposure and is not correlated with signs of exposure. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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## **SECTION 5: FIREFIGHTING MEASURES**

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### **5.1 Extinguishing media**

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

### **5.2 Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen halides.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Blowing agent vaporizes quickly at room temperature. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

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### 5.3 Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**6.1 Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. Confined space entry procedures must be followed before entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**6.2 Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**6.3 Methods and materials for containment and cleaning up:** Contain spilled material if possible. Absorb with materials such as: Dirt. Sand. Sawdust. Collect in suitable and properly labeled containers. Wash the spill site with water. See Section 13, Disposal Considerations, for additional information.

**6.4 Reference to other sections:** References to other sections, if applicable, have been provided in the previous sub-sections.

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## SECTION 7: HANDLING AND STORAGE

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**7.1 Precautions for safe handling:** Avoid contact with eyes. Avoid breathing vapor. Wash thoroughly after handling. Use with adequate ventilation. Keep container closed. Do not enter confined spaces unless adequately ventilated. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

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**7.2 Conditions for safe storage, including any incompatibilities:** Store in a dry place. Avoid prolonged exposure to heat and air. Protect from atmospheric moisture. Blowing agent may migrate from product and accumulate in some storage situations. Elevated temperatures can cause pressure buildup in closed containers due to the release of blowing agents. See Section 10 for more specific information.

**Storage stability**

**Storage temperature:** 5 - 30 °C  
**Storage Period:** 15 Month

**7.3 Specific end use(s):** See the technical data sheet on this product for further information.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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**8.1 Control parameters**

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
1,1,1,2-Tetrafluoroethane	US WEEL	TWA	1,000 ppm
	GB EH40	TWA	4,240 mg/m <sup>3</sup> 1,000 ppm
2,2'-oxybisethanol	US WEEL	TWA	10 mg/m <sup>3</sup>
	GB EH40	TWA	101 mg/m <sup>3</sup> 23 ppm
Triethyl phosphate	US WEEL	TWA	7.45 mg/m <sup>3</sup>

**8.2 Exposure controls**

**Engineering controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

**Individual protection measures**

**Eye/face protection:** Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

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**Other protection:** Wear clean, body-covering clothing.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

### Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	Liquid.
<b>Color</b>	Colorless
<b>Odor</b>	Characteristic
<b>Odor Threshold</b>	No test data available
<b>pH</b>	Not applicable
<b>Melting point/range</b>	No test data available
<b>Freezing point</b>	No test data available
<b>Boiling point (760 mmHg)</b>	Not applicable
<b>Flash point</b>	<b>closed cup</b> No test data available
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	Not applicable to liquids
<b>Lower explosion limit</b>	No test data available
<b>Upper explosion limit</b>	No test data available
<b>Vapor Pressure</b>	Container is under pressure.
<b>Relative Vapor Density (air = 1)</b>	No test data available
<b>Relative Density (water = 1)</b>	1.1 - 1.2 at 25 °C / 25 °C <i>Supplier</i>
<b>Water solubility</b>	Partially miscible
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	No test data available
<b>Decomposition temperature</b>	No test data available
<b>Dynamic Viscosity</b>	Not applicable
<b>Kinematic Viscosity</b>	Not applicable
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No

### 9.2 Other information

**Product name: FROTH-PAK™ 600 Polyol QR****Revision Date: 28.10.2016****Version: 10.0****Molecular weight** Not applicable

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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**SECTION 10: STABILITY AND REACTIVITY**

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**10.1 Reactivity:** No data available**10.2 Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.**10.3 Possibility of hazardous reactions:** Will not occur by itself.**10.4 Conditions to avoid:** Product can oxidize at elevated temperatures. Elevated temperatures can cause pressure buildup in closed containers due to the release of blowing agents. Generation of gas during decomposition can cause pressure in closed systems.**10.5 Incompatible materials:** Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.**10.6 Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Hydrogen halides. Ketones. Polymer fragments.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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*Toxicological information appears in this section when such data is available.*

**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Signs and symptoms of excessive exposure may include: May cause lacrimation (tears). Salivation. Convulsions. Tremors. Increased activity (hyperactivity).

As product: Single dose oral LD50 has not been determined.  
LD50, Rat, > 2,000 mg/kg Estimated.

**Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.  
LD50, Rabbit, > 2,000 mg/kg Estimated.

**Acute inhalation toxicity**

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Prolonged excessive exposure may cause adverse effects. In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. May cause respiratory irritation and central nervous system depression. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.  
As product: The LC50 has not been determined.

**Skin corrosion/irritation**

Prolonged contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**

May cause slight eye irritation.  
May cause slight corneal injury.

**Sensitization**

For skin sensitization:  
No relevant data found.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Contains a component which is reported to be a weak organophosphate-type cholinesterase inhibitor. Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions. Contains component(s) which have been reported to cause effects on the following organs in humans: Kidney. Gastrointestinal tract. In animals, effects have been reported on the following organs: Liver.

**Carcinogenicity**

No relevant data found.

**Teratogenicity**

Diethylene glycol has caused toxicity to the fetus and some birth defects at maternally toxic, high doses in animals. Other animal studies have not reproduced birth defects even at much higher doses that caused severe maternal toxicity. Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother. Contains component(s) which, in laboratory animals, have been toxic to the fetus at doses nontoxic to the mother.

**Reproductive toxicity**

In animal studies on component(s), effects on reproduction were seen only at doses that produced significant toxicity to the parent animals. Diethylene glycol did not interfere with reproduction in animal studies except at very high doses.

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**Mutagenicity**

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in some animal genetic toxicity studies and positive in others.

**Aspiration Hazard**

Based on available information, aspiration hazard could not be determined.

**COMPONENTS INFLUENCING TOXICOLOGY:****1,1,1,2-Tetrafluoroethane****Acute inhalation toxicity**

LC50, Rat, 4 Hour, vapour, > 1,500 mg/l

**Polyether polyol****Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause respiratory irritation.

The LC50 has not been determined.

**Tris(1-chloro-2-propyl) phosphate****Acute inhalation toxicity**

No deaths occurred at this concentration. LC50, Rat, 4 Hour, dust/mist, > 7 mg/l

**Polyester polyol****Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous.

The LC50 has not been determined.,

**2,2'-oxybisethanol****Acute inhalation toxicity**

LC50, Rat, 4 Hour, dust/mist, > 4.6 mg/l The LC50 value is greater than the Maximum Attainable Concentration. No deaths occurred at this concentration.

**Triethyl phosphate****Acute inhalation toxicity**

LC50, Rat, 4 Hour, dust/mist, > 2.35 mg/l No deaths occurred at this concentration.

**2-Ethylhexanoic acid potassium salt****Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause respiratory irritation. Prolonged excessive exposure to mist may cause adverse effects.

LC50, Rat, 4 Hour, vapour, > 0.14 mg/l No deaths occurred following exposure to a saturated atmosphere.

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**SECTION 12: ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

**12.1 Toxicity****1,1,1,2-Tetrafluoroethane****Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 450 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, 980 mg/l

**Toxicity to bacteria**

EC50, Pseudomonas putida, static test, 6 Hour, Growth inhibition, > 730 mg/l

**Polyether polyol****Acute toxicity to fish**

For similar material(s):

Material is not classified as dangerous to aquatic organisms.

**Tris(1-chloro-2-propyl) phosphate****Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms.

LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, 84 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, 131 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Growth rate inhibition, 82 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

EC50, activated sludge, Respiration inhibition, 3 Hour, 784 mg/l, OECD 209 Test

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 32 mg/l

MATC (Maximum Acceptable Toxicant Level), Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, > 32 mg/l

**Polyester polyol****Acute toxicity to fish**

For similar material(s):

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

**2,2'-oxybisethanol**

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**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).  
Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).  
LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 75,200 mg/l, OECD Test Guideline 203 or Equivalent

**Toxicity to bacteria**

EC50, activated sludge, 3 Hour, > 1,000 mg/l, OECD 209 Test

**Triethyl phosphate****Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).  
LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, 2,140 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), static test, 48 Hour, 350 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

EC50, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 900 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**

EC50, activated sludge, Respiration inhibition, 30 min, > 2,985 mg/l, OECD 209 Test

**2-Ethylhexanoic acid potassium salt****Acute toxicity to fish**

Based on information for a similar material:  
Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna, 60 mg/l

**12.2 Persistence and degradability****1,1,1,2-Tetrafluoroethane**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

**Biodegradation:** 4 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301D or Equivalent

**Polyether polyol**

**Biodegradability:** Most polyols are expected to degrade only slowly in the environment.

**Tris(1-chloro-2-propyl) phosphate**

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**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

**Biodegradation:** 14 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301E or Equivalent

10-day Window: Not applicable

**Biodegradation:** 95 %

**Exposure time:** 64 d

**Method:** OECD Test Guideline 302A or Equivalent

#### **Polyester polyol**

**Biodegradability:** No relevant data found.

#### **2,2'-oxybisethanol**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Pass

**Biodegradation:** 90 - 100 %

**Exposure time:** 20 d

**Method:** OECD Test Guideline 301A or Equivalent

10-day Window: Not applicable

**Biodegradation:** 82 - 98 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 302C or Equivalent

#### **Triethyl phosphate**

**Biodegradability:** Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Not applicable

**Biodegradation:** > 90 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 302B or Equivalent

#### **2-Ethylhexanoic acid potassium salt**

**Biodegradability:** Based on information for a similar material: Material is expected to be readily biodegradable. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

### **12.3 Bioaccumulative potential**

#### **1,1,1,2-Tetrafluoroethane**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 1.68 Estimated.

#### **Polyether polyol**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

#### **Tris(1-chloro-2-propyl) phosphate**

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**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient: n-octanol/water(log Pow):** 2.59 Measured**Bioconcentration factor (BCF):** 0.8 - 4.6 Cyprinus carpio (Carp) 42 d Measured**Polyester polyol****Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).**2,2'-oxybisethanol****Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient: n-octanol/water(log Pow):** -1.98 at 20 °C Estimated.**Bioconcentration factor (BCF):** 100 Fish Measured**Triethyl phosphate****Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient: n-octanol/water(log Pow):** 0.80 Measured**2-Ethylhexanoic acid potassium salt****Bioaccumulation:** Based on information for a similar material: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**12.4 Mobility in soil****1,1,1,2-Tetrafluoroethane**

Potential for mobility in soil is high (Koc between 50 and 150).

**Partition coefficient (Koc):** 97 Estimated.**Polyether polyol**

No relevant data found.

**Tris(1-chloro-2-propyl) phosphate**

Potential for mobility in soil is slight (Koc between 2000 and 5000).

**Partition coefficient (Koc):** 1300 Estimated.**Polyester polyol**

No data available.

**2,2'-oxybisethanol**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** < 1 Estimated.**Triethyl phosphate**

Potential for mobility in soil is very high (Koc between 0 and 50).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Partition coefficient (Koc):** 48 Estimated.**2-Ethylhexanoic acid potassium salt**

Based on information for a similar material:

Potential for mobility in soil is very high (Koc between 0 and 50).

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### 12.5 Results of PBT and vPvB assessment

This substance is not classified as mutagenic, carcinogenic or reproductive toxicant to mammalian species, and the values are much higher than the threshold for toxicity to aquatic species; thus is not considered toxic (T).

### 12.6 Other adverse effects

Product contains no ozone-depleting components.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

## SECTION 14: TRANSPORT INFORMATION

### Classification for ROAD and Rail transport (ADR/RID):

- |  |   |
|--|---|
| <b>14.1 UN number</b>                    | UN 3500   |
| <b>14.2 UN proper shipping name</b>      | CHEMICAL UNDER PRESSURE, N.O.S.(1,1,1,2-Tetrafluoroethane)        |
| <b>14.3 Transport hazard class(es)</b>   | 2.2   |
| <b>14.4 Packing group</b>                | Not applicable  |
| <b>14.5 Environmental hazards</b>        | Not considered environmentally hazardous based on available data. |
| <b>14.6 Special precautions for user</b> | Hazard Identification Number: 20                                  |

### Classification for SEA transport (IMO-IMDG):

- |   |   |
|---|---|
| <b>14.1 UN number</b>   | UN 3500   |
| <b>14.2 UN proper shipping name</b>   | CHEMICAL UNDER PRESSURE, N.O.S.(1,1,1,2-Tetrafluoroethane)  |
| <b>14.3 Transport hazard class(es)</b>  | 2.2   |
| <b>14.4 Packing group</b>   | Not applicable  |
| <b>14.5 Environmental hazards</b>   | Not considered as marine pollutant based on available data. |
| <b>14.6 Special precautions for user</b>  | EmS: F-C, S-V   |
| <b>14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC</b> | Consult IMO regulations before transporting ocean bulk      |

**Product name: FROTH-PAK™ 600 Polyol QR****Revision Date: 28.10.2016****Version: 10.0****Code****Classification for AIR transport (IATA/ICAO):**

<b>14.1 UN number</b>	UN 3500
<b>14.2 UN proper shipping name</b>	Chemical under pressure, n.o.s.(1,1,1,2-Tetrafluoroethane)
<b>14.3 Transport hazard class(es)</b>	2.2
<b>14.4 Packing group</b>	Not applicable
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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**SECTION 15: REGULATORY INFORMATION**

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**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****REACH Regulation (EC) No 1907/2006**

This product contains only components that have been either pre-registered, registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

**Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.**

Listed in Regulation: Not applicable

**15.2 Chemical safety assessment**

Not applicable

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**SECTION 16: OTHER INFORMATION**

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**Full text of H-Statements referred to under sections 2 and 3.**

H280 Contains gas under pressure; may explode if heated.

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H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
H412	Harmful to aquatic life with long lasting effects.

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008**

Aquatic Chronic - 3 - H412 - Calculation method

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

GB EH40	UK. EH40 WEL - Workplace Exposure Limits
TWA	Long-term exposure limit (8-hour TWA reference period)
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW CHEMICAL COMPANY LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.