

# Iccons FoamFlo Fire

## Iccons

Chemwatch: 34-4757  
Version No: 4.1.1.1  
Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 4

Issue Date: 03/05/2018  
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S.GHS.AUS.EN

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

### Product Identifier

Product name	Iccons FoamFlo Fire
Synonyms	Not Available
Proper shipping name	AEROSOLS
Other means of identification	Not Available

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

Relevant identified uses	Application is by spray atomisation from a hand held aerosol pack Polyurethane.
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### Details of the supplier of the safety data sheet

Registered company name	Iccons
Address	12 Produce Drive Dandenong South VIC 3175 Australia
Telephone	+61 3 9706 4344
Fax	09 9768 3329
Website	www.iccons.com.au
Email	info@iccons.com.au

### Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	1800 039 008 (24hrs)
Other emergency telephone numbers	+61 3 9573 112

## CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
1800 039 008	+61 2 9186 1132	Not Available

Once connected and if the message is not in your preferred language then please dial 01

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

Poisons Schedule	S6
Classification [1]	Aerosols Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Skin Sensitizer Category 1, Respiratory Sensitizer Category 1, Carcinogenicity Category 1B, Reproductive Toxicity Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - single exposure Category 3 (narcotic effects), Specific target organ toxicity - repeated exposure Category 2, Chronic Aquatic Hazard Category 4
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### Label elements

Hazard pictogram(s)	
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SIGNAL WORD **DANGER**

### Hazard statement(s)

H222	Extremely flammable aerosol.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Continued...

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H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H413	May cause long lasting harmful effects to aquatic life.
AUH044	Risk of explosion if heated under confinement.

## Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Pressurized container: Do not pierce or burn, even after use.

## Precautionary statement(s) Response

P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362	Take off contaminated clothing and wash before reuse.

## Precautionary statement(s) Storage

P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

## Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

CAS No	%[weight]	Name
9016-87-9	>25	<u>polymeric diphenylmethane diisocyanate</u>
13674-84-5	1-25	<u>tris(2-chloroisopropyl)phosphate</u>
78-40-0	1-25	<u>triethyl phosphate</u>
107-21-1	1-25	<u>ethylene glycol</u>
3296-90-0	1-5	<u>2,2-bis(bromomethyl)-1,3-propanediol</u>
75-37-6	1-10	<u>1,1-difluoroethane</u>
75-28-5.	1-10	<u>iso-butane</u>
115-10-6	1-10	<u>dimethyl ether</u>

## SECTION 4 FIRST AID MEASURES

## Description of first aid measures

<b>Eye Contact</b>	<p>If aerosols come in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If solids or aerosol mists are deposited upon the skin:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Remove any adhering solids with industrial skin cleansing cream.</li> <li>▶ <b>DO NOT use solvents.</b></li> <li>▶ Seek medical attention in the event of irritation.</li> </ul>
<b>Inhalation</b>	<p>Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. A physician should be consulted.</p> <p>If aerosols, fumes or combustion products are inhaled:</p> <ul style="list-style-type: none"> <li>▶ Remove to fresh air.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> </ul>

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	<ul style="list-style-type: none"> <li>▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul>

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

Treat symptomatically.

- ▶ Polyethylene glycols are generally poorly absorbed orally and are mostly unchanged by the kidney.
- ▶ Dermal absorption can occur across damaged skin (e.g. through burns) leading to increased osmolality, anion gap metabolic acidosis, elevated calcium, low ionised calcium, CNS depression and renal failure.
- ▶ Treatment consists of supportive care.

[Ellenhorn and Barceloux: Medical Toxicology]

To treat poisoning by the higher aliphatic alcohols (up to C7):

- ▶ Gastric lavage with copious amounts of water.
- ▶ It may be beneficial to instill 60 ml of mineral oil into the stomach.
- ▶ Oxygen and artificial respiration as needed.
- ▶ Electrolyte balance: it may be useful to start 500 ml. M/6 sodium bicarbonate intravenously but maintain a cautious and conservative attitude toward electrolyte replacement unless shock or severe acidosis threatens.
- ▶ To protect the liver, maintain carbohydrate intake by intravenous infusions of glucose.
- ▶ Haemodialysis if coma is deep and persistent. [GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, Ed 5]

## BASIC TREATMENT

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- ▶ Monitor and treat, where necessary, for shock.
- ▶ Monitor and treat, where necessary, for pulmonary oedema.
- ▶ Anticipate and treat, where necessary, for seizures.
- ▶ **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- ▶ Give activated charcoal.

## ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ If the patient is hypoglycaemic (decreased or loss of consciousness, tachycardia, pallor, dilated pupils, diaphoresis and/or dextrose strip or glucometer readings below 50 mg), give 50% dextrose.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

## EMERGENCY DEPARTMENT

- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- ▶ Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- ▶ Acidosis may respond to hyperventilation and bicarbonate therapy.
- ▶ Haemodialysis might be considered in patients with severe intoxication.
- ▶ Consult a toxicologist as necessary. BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

For C8 alcohols and above.

Symptomatic and supportive therapy is advised in managing patients.

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.
- ▶ Flooding quantities of water only.

**SMALL FIRE:**

- ▶ Water spray, dry chemical or CO2

**LARGE FIRE:**

- ▶ Water spray or fog.

**Special hazards arising from the substrate or mixture****Fire Incompatibility**

- ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

**Advice for firefighters**

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<b>Fire Fighting</b>	<p>FOR FIRES INVOLVING MANY GAS CYLINDERS:</p> <ul style="list-style-type: none"> <li>▶ To stop the flow of gas, specifically trained personnel may inert the atmosphere to reduce oxygen levels thus allowing the capping of leaking container(s).</li> <li>▶ Reduce the rate of flow and inject an inert gas, if possible, before completely stopping the flow to prevent flashback.</li> <li>▶ <b>DO NOT extinguish the fire until the supply is shut off</b> otherwise an explosive re-ignition may occur.</li> <li>▶ If the fire is extinguished and the flow of gas continues, used increased ventilation to prevent build-up, of explosive atmosphere.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Liquid and vapour are highly flammable.</li> <li>▶ Severe fire hazard when exposed to heat or flame.</li> <li>▶ Vapour forms an explosive mixture with air.</li> <li>▶ Severe explosion hazard, in the form of vapour, when exposed to flame or spark.</li> </ul> <p>Combustion products include:</p> <ul style="list-style-type: none"> <li>, carbon dioxide (CO<sub>2</sub>)</li> <li>, isocyanates</li> <li>, and minor amounts of</li> <li>, hydrogen cyanide</li> <li>, hydrogen chloride</li> <li>, phosgene</li> <li>, hydrogen fluoride</li> <li>, nitrogen oxides (NO<sub>x</sub>)</li> <li>, phosphorus oxides (PO<sub>x</sub>)</li> <li>, other pyrolysis products typical of burning organic material.</li> </ul> <p><b>Contains low boiling substance:</b> Closed containers may rupture due to pressure buildup under fire conditions.</p> <ul style="list-style-type: none"> <li>▶ Vented gas is more dense than air and may collect in pits, basements.</li> </ul>
<b>HAZCHEM</b>	2Y

## SECTION 6 ACCIDENTAL RELEASE MEASURES

## Personal precautions, protective equipment and emergency procedures

See section 8

## Environmental precautions

See section 12

## Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Wear protective clothing, impervious gloves and safety glasses.</li> <li>▶ Shut off all possible sources of ignition and increase ventilation.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by all means available, spillage from entering drains or water courses.</li> </ul> <p>For isocyanate spills of less than 40 litres (2 m<sup>2</sup>):</p> <ul style="list-style-type: none"> <li>▶ Evacuate area from everybody not dealing with the emergency, keep them upwind and prevent further access, remove ignition sources and, if inside building, ventilate area as well as possible.</li> <li>▶ Notify supervision and others as necessary.</li> <li>▶ Put on personal protective equipment (suitable respiratory protection, face and eye protection, protective suit, gloves and impermeable boots).</li> <li>▶ Control source of leakage (where applicable).</li> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

## Precautions for safe handling

<b>Safe handling</b>	<p>Radon and its radioactive decay products are hazardous if inhaled or ingested</p> <ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can</li> <li>▶ Store in original containers in approved flammable liquid storage area.</li> <li>▶ <b>DO NOT store in pits, depressions, basements or areas where vapours may be trapped.</b></li> </ul>

Continued...

- ▶ No smoking, naked lights, heat or ignition sources.
- ▶ Keep containers securely sealed.

#### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT use aluminium or galvanised containers</b></li> <li>▶ Aerosol dispenser.</li> <li>▶ Check that containers are clearly labelled.</li> </ul>
<b>Storage incompatibility</b>	<p>Alcohols</p> <ul style="list-style-type: none"> <li>▶ are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.</li> <li>▶ reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen</li> <li>▶ react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzinc, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium</li> <li>▶ should not be heated above 49 deg. C. when in contact with aluminium equipment</li> </ul> <p>Butane/ isobutane</p> <ul style="list-style-type: none"> <li>▶ reacts violently with strong oxidisers</li> <li>▶ reacts with acetylene, halogens and nitrous oxides</li> <li>▶ is incompatible with chlorine dioxide, conc. nitric acid and some plastics</li> <li>▶ may generate electrostatic charges, due to low conductivity, in flow or when agitated - these may ignite the vapour.</li> </ul> <p>Segregate from nickel carbonyl in the presence of oxygen, heat (20-40 C)</p> <p>Ethylene glycol:</p> <ul style="list-style-type: none"> <li>▶ reacts violently with oxidisers and oxidising acids, sulfuric acid, chlorosulfonic acid, chromyl chloride, perchloric acid</li> <li>▶ forms explosive mixtures with sodium perchlorate</li> <li>▶ is incompatible with strong acids, caustics, aliphatic amines, isocyanates, chlorosulfonic acid, oleum, potassium bichromate, phosphorus pentasulfide, sodium chlorite</li> <li>▶ Avoid reaction with water, alcohols and detergent solutions.</li> <li>▶ Isocyanates and thioisocyanates are incompatible with many classes of compounds, reacting exothermically to release toxic gases. Reactions with amines, strong bases, aldehydes, alcohols, alkali metals, ketones, mercaptans, strong oxidisers, hydrides, phenols, and peroxides can cause vigorous releases of heat. Acids and bases initiate polymerisation reactions in these materials.</li> <li>▶ Avoid strong acids, bases.</li> <li>▶ A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol.</li> <li>▶ The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy released per unit of mass, rather than on a molar basis (J/g) be used in the assessment.</li> <li>▶ For example, in "open vessel processes" (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in "closed vessel processes" (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g.</li> </ul> <p>BREThERICK: Handbook of Reactive Chemical Hazards, 4th Edition</p> <ul style="list-style-type: none"> <li>▶ Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances</li> <li>▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous</li> <li>▶ Segregate from alcohol, water.</li> </ul>

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	polymeric diphenylmethane diisocyanate	Isocyanates, all (as-NCO)	0.02 mg/m3	0.07 mg/m3	Not Available	Not Available
Australia Exposure Standards	ethylene glycol	Ethylene glycol (particulate)	10 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	ethylene glycol	Ethylene glycol (vapour)	20 ppm / 52 mg/m3	104 mg/m3 / 40 ppm	Not Available	Not Available
Australia Exposure Standards	dimethyl ether	Dimethyl ether	400 ppm / 760 mg/m3	950 mg/m3 / 500 ppm	Not Available	Not Available

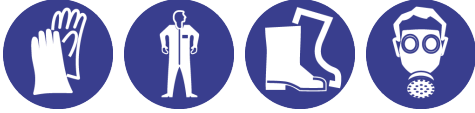
#### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
polymeric diphenylmethane diisocyanate	Polymethylene polyphenyl isocyanate; (Polymeric diphenylmethane diisocyanate)	0.15 mg/m3	3.6 mg/m3	22 mg/m3
triethyl phosphate	Triethyl phosphate; (TEP)	23 mg/m3	250 mg/m3	320 mg/m3
ethylene glycol	Ethylene glycol	30 ppm	40 ppm	60 ppm
1,1-difluoroethane	Difluoroethane; (1,1-Difluoroethane; HFC 152a)	Not Available	Not Available	Not Available
iso-butane	Methylpropane, 2-; (Isobutane)	5500 ppm	17000 ppm	53000 ppm
dimethyl ether	Methyl ether; (Dimethyl ether)	3,000 ppm	3800 ppm	7200 ppm

Ingredient	Original IDLH	Revised IDLH
polymeric diphenylmethane diisocyanate	Not Available	Not Available
tris(2-chloroisopropyl)phosphate	Not Available	Not Available
triethyl phosphate	Not Available	Not Available
ethylene glycol	Not Available	Not Available
2,2-bis(bromomethyl)-1,3-propanediol	Not Available	Not Available

1,1-difluoroethane	Not Available	Not Available
iso-butane	Not Available	Not Available
dimethyl ether	Not Available	Not Available

## Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> <li>▶ Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.</li> <li>▶ Protective gloves and overalls should be worn as specified in the appropriate national standard.</li> <li>▶ Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated.</li> <li>▶ NOTE: Natural rubber, neoprene, PVC can be affected by isocyanates</li> <li>▶ No special equipment needed when handling small quantities.</li> </ul> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>▶ For potentially moderate exposures:</li> <li>▶ Wear general protective gloves, eg. light weight rubber gloves.</li> <li>▶ For potentially heavy exposures:</li> <li>▶ Wear chemical protective gloves, eg. PVC. and safety footwear.</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]</li> <li>▶ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent]</li> <li>▶ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.</li> <li>▶ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.</li> <li>▶ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.</li> </ul> <p>No special equipment needed when handling small quantities.</p> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eyewash unit.</li> <li>▶ The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton.</li> <li>▶ Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost.</li> </ul> <p>BREThERICK: Handbook of Reactive Chemical Hazards.</p>

## Recommended material(s)

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

**"Forsberg Clothing Performance Index"**.

The effect(s) of the following substance(s) are taken into account in the **computer-**

**generated** selection:

Iccons FoamFlo Fire

Material	CPI
BUTYL	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C

## Respiratory protection

Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AX-AUS P2	-	AX-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AX-AUS / Class 1 P2	-
up to 100 x ES	-	AX-2 P2	AX-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G =

## Iccons FoamFlo Fire

PE/EVAL/PE	C
PVA	C
PVC	C
TEFLON	C

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

<b>Appearance</b>	Coloured highly flammable liquid with a characteristic odour.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	-41 (dimethyl ether)	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	HIGHLY FLAMMABLE.	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Not Available	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	1.1	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Elevated temperatures.</li> <li>▶ Presence of open flame.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

<b>Inhaled</b>	<p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>The paraffin gases are practically not harmful at low doses. Higher doses may produce reversible brain and nerve depression and irritation. Animal testing showed a single, high-level exposure to 1,1-difluoroethane by inhalation has caused difficulty breathing, lung irritation, lethargy, inco-ordination, and loss of consciousness, with sensitisation of the heart occurring at a concentration of 15% after adrenaline was given into a vein. Repeated exposure caused increased urinary fluoride, reduced kidney weight and reversible kidney changes. Inhaling high concentrations can depress the central nervous system, which may lead to inco-ordination, impaired judgment and, if exposure is prolonged, unconsciousness and even death. Aliphatic alcohols with more than 3-carbons cause headache, dizziness, drowsiness, muscle weakness and delirium, central depression, coma, seizures and behavioural changes. Secondary respiratory depression and failure, as well as low blood pressure and irregular heart rhythms, may follow. Inhalation of toxic gases may cause:</p> <ul style="list-style-type: none"> <li>▶ Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures;</li> <li>▶ respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest;</li> <li>▶ heart: collapse, irregular heartbeats and cardiac arrest;</li> <li>▶ gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain.</li> </ul>
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Continued...

## Iccons FoamFlo Fire

	<p>The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure.</p> <p>Nerve damage can be caused by some non-ring hydrocarbons. Symptoms are temporary, and include weakness, tremors, increased saliva, some convulsions, excessive tears with discolouration and inco-ordination lasting up to 24 hours.</p> <p>Organic phosphates are very stable and highly hazardous. There are a number of effects they can have on the body, including excitement of the central nervous system, and irritation of the skin and respiratory tract.</p> <p>Chlorinated phosphate esters can cause loss of sensation and relax the muscle.</p> <p>Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure.</p> <p>Symptoms of asphyxia (suffocation) may include headache, dizziness, shortness of breath, muscular weakness, drowsiness and ringing in the ears. If the asphyxia is allowed to progress, there may be nausea and vomiting, further physical weakness and unconsciousness and, finally, convulsions, coma and death.</p> <p><b>WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.</b></p>								
Ingestion	<p>Considered an unlikely route of entry in commercial/industrial environments</p> <p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>If swallowed, the toxic effects of glycols (dihydric alcohols) are similar to those of alcohol, with depression of the central nervous system, nausea, vomiting, and degenerative changes in the liver and kidney.</p> <p>A single high oral dose of 1,1-difluoroethane produced weight loss and lethargy.</p> <p>Isoparaffinic hydrocarbons cause temporary lethargy, weakness, inco-ordination and diarrhoea.</p> <p>For ethylene glycol:</p> <p>Symptoms following swallowing ethylene glycol include failure of breathing, central nervous system depression, cardiovascular collapse, lung swelling, acute kidney failure, and even brain damage. Swallowing 100 millilitres has caused death.</p> <p>There are three stages of ethylene glycol poisoning. The severity of each stage depends upon the amount of ethylene glycol swallowed.</p>								
Skin Contact	<p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.</p> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>Skin exposure to isoparaffins may produce slight to moderate irritation in animals and humans. Rare sensitisation reactions in humans have occurred.</p> <p>Spray mist may produce discomfort</p> <p>Most liquid alcohols appear to act as primary skin irritants in humans. Significant percutaneous absorption occurs in rabbits but not apparently in man.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>								
Eye	<p>Not considered to be a risk because of the extreme volatility of the gas. This material can cause eye irritation and damage in some persons.</p>								
Chronic	<p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information.</p> <p>Harmful: danger of serious damage to health by prolonged exposure through inhalation.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p> <p>Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Main route of exposure to the gas in the workplace is by inhalation.</p> <p>Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates. [CCTRADE-Bayer, APMF]</p> <p>Exposure to ethylene glycol over a period of several weeks may cause throat irritation, mild headache and low backache. These may worsen with increasing concentration of the substance. They may progress to a burning sensation in the throat, a burning cough, and drowsiness.</p> <p>Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.</p>								
Iccons FoamFlo Fire	<table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Not Available</td> <td>Not Available</td> </tr> </tbody> </table>	TOXICITY	IRRITATION	Not Available	Not Available				
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Not Available	Not Available								
polymeric diphenylmethane diisocyanate	<table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Dermal (rabbit) LD50: &gt;9400 mg/kg<sup>[2]</sup></td> <td>Eye (rabbit): 100 mg - mild</td> </tr> <tr> <td>Inhalation (rat) LC50: 0.49 mg/l/4h<sup>[2]</sup></td> <td></td> </tr> <tr> <td>Oral (rat) LD50: 43000 mg/kg<sup>[2]</sup></td> <td></td> </tr> </tbody> </table>	TOXICITY	IRRITATION	Dermal (rabbit) LD50: >9400 mg/kg <sup>[2]</sup>	Eye (rabbit): 100 mg - mild	Inhalation (rat) LC50: 0.49 mg/l/4h <sup>[2]</sup>		Oral (rat) LD50: 43000 mg/kg <sup>[2]</sup>	
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TOXICITY	IRRITATION								
Oral (rat) LD50: >800 mg/kg <sup>[1]</sup>	Eye : Severe *								
	Skin : Severe *								



## Iccons FoamFlo Fire

ethylene glycol	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 9530 mg/kg <sup>[2]</sup>	Eye (rabbit): 100 mg/1h - mild
	Inhalation (rat) LC50: 100.2 mg/l/8hr <sup>[2]</sup>	Eye (rabbit): 12 mg/m <sup>3</sup> /3D
	Oral (rat) LD50: 4700 mg/kg <sup>[2]</sup>	Eye (rabbit): 1440mg/6h-moderate
		Eye (rabbit): 500 mg/24h - mild
		Skin (rabbit): 555 mg(open)-mild
2,2-bis(bromomethyl)-1,3-propanediol	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 1880 mg/kg <sup>[2]</sup>	Not Available
1,1-difluoroethane	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (mouse) LC50: 488.5 mg/l/2h <sup>[2]</sup>	Not Available
	Oral (rat) LD50: 484 mg/kg <sup>[2]</sup>	
iso-butane	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: 658 mg/l/4h <sup>[2]</sup>	Not Available
dimethyl ether	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: 309 mg/l/4h <sup>[2]</sup>	Not Available

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Iccons FoamFlo Fire	Not available.
POLYMERIC DIPHENYLMETHANE DIISOCYANATE	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.</p> <p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins.</p> <p>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.</p> <p>Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.</p> <p>Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.</p> <p>Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome. This group of compounds has therefore been classified as cancer-causing.</p> <p>The substance is classified by IARC as Group 3:  <b>NOT</b> classifiable as to its carcinogenicity to humans.  Evidence of carcinogenicity may be inadequate or limited in animal testing.  product</p>
TRIS(2-CHLOROISOPROPYL)PHOSPHATE	<p>Non-chlorinated triphosphates have varying chemical, physical, toxicological and environmental properties. Blooming has been identified as a source of potential exposure (human and environmental) to triphosphate plasticisers / flame retardants. Blooming is the movement of an ingredient in rubber or plastic to the outer surface after curing. Blooming is quickened by increased temperature, and triphosphates are known to bloom from car interior plastics, TVs and computer monitors.</p> <p>For tris(2-chloro-1-methylethyl)phosphate (TCPP)</p> <p>The flame retardant product supplied in the EU, marketed as TCPP, is actually a reaction mixture containing four isomers. The individual isomers in this reaction mixture are not separated or marketed. The individual components are never produced as such. These data are true for TCPP produced by all EU manufacturers.</p>
TRIETHYL PHOSPHATE	<p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p><b>NOTE:</b> Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.</p> <p>For toxicological endpoints, the NOAEL is 1000 mg/kg bw for subacute toxicity, a NOEL of 625 mg/kg bw/day for teratogenicity and about 335 mg/kg bw for fertility effects. On the basis of all data on genotoxicity, a mutagenic effect of TEP is not assumed. The substance is harmful with a narcotic effect and, at high doses, shows certain neurotoxic properties (inhibition of cholinesterase) without indicating delayed neurotoxicity. The substance is not irritant to the skin. Studies on experimental animals showed no irritation properties. The most comprehensive documented, actual study (OECD Guideline 405, GLP) showed moderate irritation in 1 of 3 animals. According to the classification guideline this does not lead to a classification as irritant Triethylphosphate administered orally or i.p. to rodents is eliminated rapidly and comprehensively (90% within 16 hours). The very low acute dermal toxicity indicates a markedly lower adsorption than with oral administration. In a subchronic study (rat; oral, up to 6700 mg/kg bw) retarded weight gain, elevated liver and adrenals weight were observed (a validated NOEL or NOAEL cannot be given, the approx. NOEL based on the available data is about 670 mg/kg bw). A subacute 28-day study performed according actual guidelines after oral administration to rats determined a NOEL of 100 mg/kg bw (increased liver metabolism). An increase of liver metabolism is of no toxicological relevance, therefore a NOAEL of 1000 mg/kg bw was derived. After high doses to rats a depressive effect on the central nervous system and slight inhibition of cholinesterases are described. In mice, a NOAEL of 274 mg/kg bw was determined in an oral study (1/5 LD 50 = 274 mg/kg bw for 4 weeks) . In rats a NOEL following inhalatory exposure (5h/d for 12 d) of 366 mg/m<sup>3</sup> was determined. Conclusion: low toxicity, no serious damage in oral doses up to 6700 mg/kg bw. The NOAEL in the most relevant tests was 1000 mg/kg bw/day. Reproductive Toxicity In an early study using a small number of animals the litter size was reduced after repeated feeding to both sexes (rat) beginning at 670 mg/kg bw, although no symptoms of poisoning in the parent animals were described for the 670 mg/kg bw dose. The NOEL for effects on the litter size was 335 mg/kg bw/day. Neither testicular weights nor the histological investigation of the testes revealed remarkable findings in this study (max. dose 6700 mg/kg bw/day). A more recent 28-day study with doses up to 1000 mg/kg bw also showed no effect on the testicular weight [Bayer 1992]. A teratogenicity study in rats showed no evidence of a teratogenic potential up to the highest dose of 625 mg/kg bw/day (NOEL developmental toxicity). In the highest dose there was reduction of body weight gain, food intake and feces excretion as a sign of</p>

	maternal toxicity (NOEL 125 mg/kg bw/day). Genetic Toxicity Aside from several Ames tests with negative results, triethylphosphate induces gene mutations without metabolic activation in <i>S. typhimurium</i> his C117, some bacteria, viruses and a yeast strain. For clarification of the endpoint gene mutation a HPRT test in V79 cell cultures was done. This test revealed a negative result with and without metabolic activation. In an in vitro UDS test on rat hepatocytes triethylphosphate showed no DNA-damaging effect. The results for <i>Drosophila melanogaster</i> in the limited documented recessive-lethal tests are contradictory, while in vivo studies on the mouse (cytogenetics in the bone marrow, dominant lethal test) were negative.
ETHYLENE GLYCOL	For ethylene glycol: Ethylene glycol is quickly and extensively absorbed throughout the gastrointestinal tract. Limited information suggests that it is also absorbed through the airways; absorption through skin is apparently slow. Following absorption, it is distributed throughout the body. In humans, it is initially metabolized by alcohol dehydrogenase to form glycoaldehyde, which is rapidly converted to glycolic acid and glyoxal. [Estimated Lethal Dose (human) 100 ml; RTECS quoted by Orica] Substance is reproductive effector in rats (birth defects). Mutagenic to rat cells.
2,2-BIS(BROMOMETHYL)-1,3-PROPANEDIOL	From available experimental data, the potential for polybrominated fire retardants (PBFRs) to cause cancer, hormonal dysfunction and neuro-developmental toxicity are of concern. Their structural similarities to the polychlorinated diphenyl ethers, nitrofen and polychlorinated biphenyls add to concerns for their health effects. They cause mild eye, airway and skin irritation, damage to the liver, thyroid and sex organs. They can be harmful following prolonged contact with the skin or if swallowed.  <b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [National Toxicology Program: U.S. Dep. of Health & Human Services 2002]
1,1-DIFLUOROETHANE	1,1-difluoroethane is practically non-toxic following acute or chronic inhalation exposure. In animal testing, extremely high concentrations (5% and over) may cause reduced contraction of heart muscle and at even higher levels, heartbeat irregularities. It seems to have a weak effect in damaging genetic material in cells. Studies have not shown it to cause developmental or reproductive toxicity, and it has not been shown to cause mutations.
POLYMERIC DIPHENYLMETHANE DIISOCYANATE & 2,2-BIS(BROMOMETHYL)-1,3-PROPANEDIOL	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.
POLYMERIC DIPHENYLMETHANE DIISOCYANATE & TRIETHYL PHOSPHATE	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
TRIS(2-CHLOROISOPROPYL)PHOSPHATE & TRIETHYL PHOSPHATE	Alkyl esters of phosphoric acid exhibit a low to moderate acute toxicity and metabolised. From studies done on mice, they are not likely to cause gene damage or affect reproduction. However, 2-ethylhexanoic acid produced an effect on newborn rats at high doses to the pregnant female.

Acute Toxicity	✓	Carcinogenicity	✓
Skin Irritation/Corrosion	✓	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✓
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend: ✗ – Data available but does not fill the criteria for classification  
✓ – Data available to make classification  
⊖ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

Iccons FoamFlo Fire	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

polymeric diphenylmethane diisocyanate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

tris(2-chloroisopropyl)phosphate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	=31.6mg/L	1
	EC50	48	Crustacea	=63mg/L	1
	EC50	96	Algae or other aquatic plants	=4mg/L	1
	NOEC	96	Algae or other aquatic plants	6mg/L	1

triethyl phosphate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>100mg/L	4
	NOEC	504	Crustacea	31.6mg/L	2

ethylene glycol	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	8050mg/L	4
	EC50	48	Crustacea	5046.29mg/L	5
	EC50	96	Algae or other aquatic plants	6500-13000mg/L	1
	NOEC	552	Crustacea	>=1000mg/L	2

## Iccons FoamFlo Fire

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE	
	<b>2,2-bis(bromomethyl)-1,3-propanediol</b>	Not Available	Not Available	Not Available	Not Available	Not Available
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE	
	<b>1,1-difluoroethane</b>	LC50	96	Fish	291.31mg/L	2
	EC50	48	Crustacea	634.41mg/L	2	
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE	
	<b>iso-butane</b>	Not Available	Not Available	Not Available	Not Available	Not Available
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE	
	<b>dimethyl ether</b>	LC50	96	Fish	>4100.0mg/L	2
	EC50	48	Crustacea	>4400.0mg/L	2	
	NOEC	48	Crustacea	>4000mg/L	1	

**Legend:** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

May cause long-term adverse effects in the aquatic environment.

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
tris(2-chloroisopropyl)phosphate	HIGH	HIGH
triethyl phosphate	HIGH	HIGH
ethylene glycol	LOW (Half-life = 24 days)	LOW (Half-life = 3.46 days)
2,2-bis(bromomethyl)-1,3-propanediol	LOW	LOW
1,1-difluoroethane	LOW	LOW
iso-butane	HIGH	HIGH
dimethyl ether	LOW	LOW

### Bioaccumulative potential

Ingredient	Bioaccumulation
tris(2-chloroisopropyl)phosphate	LOW (BCF = 4.6)
triethyl phosphate	LOW (BCF = 1.3)
ethylene glycol	LOW (BCF = 200)
2,2-bis(bromomethyl)-1,3-propanediol	LOW (BCF = 4.8)
1,1-difluoroethane	LOW (LogKOW = 0.75)
iso-butane	LOW (BCF = 1.97)
dimethyl ether	LOW (LogKOW = 0.1)

### Mobility in soil

Ingredient	Mobility
tris(2-chloroisopropyl)phosphate	LOW (KOC = 1278)
triethyl phosphate	LOW (KOC = 47.96)
ethylene glycol	HIGH (KOC = 1)
2,2-bis(bromomethyl)-1,3-propanediol	HIGH (KOC = 1)
1,1-difluoroethane	LOW (KOC = 35.04)
iso-butane	LOW (KOC = 35.04)
dimethyl ether	HIGH (KOC = 1.292)

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Consult State Land Waste Management Authority for disposal.</li> <li>▶ Discharge contents of damaged aerosol cans at an approved site.</li> <li>▶ Allow small quantities to evaporate.</li> <li>▶ <b>DO NOT</b> incinerate or puncture aerosol cans.</li> </ul>
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## SECTION 14 TRANSPORT INFORMATION

## Labels Required

	
Marine Pollutant	NO
HAZCHEM	2Y

## Land transport (ADG)

UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	Class : 2.1 Subrisk : Not Applicable
Packing group	Not Applicable
Environmental hazard	Not Applicable
Special precautions for user	Special provisions : 63 190 277 327 344 Limited quantity : 1000ml

## Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## Sea transport (IMDG-Code / GGVSee)

UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	IMDG Class : 2.1 IMDG Subrisk : Not Applicable
Packing group	Not Applicable
Environmental hazard	Not Applicable
Special precautions for user	EMS Number : F-D, S-U Special provisions : 63 190 277 327 344 381 959 Limited Quantities : 1000ml

## Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## SECTION 15 REGULATORY INFORMATION

## Safety, health and environmental regulations / legislation specific for the substance or mixture

## POLYMERIC DIPHENYLMETHANE DIISOCYANATE(9016-87-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards	Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals	Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australia Inventory of Chemical Substances (AICS)	Australia Work Health and Safety Regulations 2016 - Hazardous chemicals (other than lead) requiring health monitoring
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

## TRIS(2-CHLOROISOPROPYL)PHOSPHATE(13674-84-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals	Australia Inventory of Chemical Substances (AICS)
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## TRIETHYL PHOSPHATE(78-40-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals	Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)
Australia Inventory of Chemical Substances (AICS)	Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)	

## ETHYLENE GLYCOL(107-21-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

## Iccons FoamFlo Fire

## Australia Exposure Standards

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

**2,2-BIS(BROMOMETHYL)-1,3-PROPANEDIOL(3296-90-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

**1,1-DIFLUOROETHANE(75-37-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Inventory of Chemical Substances (AICS)

**ISO-BUTANE(75-28-5.) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

**DIMETHYL ETHER(115-10-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix B (Part 3)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

**National Inventory Status**

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (triethyl phosphate; dimethyl ether; 2,2-bis(bromomethyl)-1,3-propanediol; ethylene glycol; iso-butane; tris(2-chloroisopropyl)phosphate; polymeric diphenylmethane diisocyanate; 1,1-difluoroethane)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	N (polymeric diphenylmethane diisocyanate)
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	N (2,2-bis(bromomethyl)-1,3-propanediol)
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

**SECTION 16 OTHER INFORMATION**

<b>Revision Date</b>	03/05/2018
<b>Initial Date</b>	Not Available

**Other information****Ingredients with multiple cas numbers**

Name	CAS No
tris(2-chloroisopropyl)phosphate	13674-84-5, 16839-32-0, 98112-32-4, 1244733-77-4
dimethyl ether	115-10-6, 157621-61-9

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC— TWA: Permissible Concentration-Time Weighted Average  
 PC— STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit.  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection

Continued...

OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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