

Action Corrosion Pty Ltd

Chemwatch: **5244-50** Version No: **5.1.1.1**

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 4

Issue Date: **03/08/2017**Print Date: **03/15/2017**L.GHS.AUS.EN

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

Product Identifier

Product name	Clear HVAC-R Aerosol
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

Details of the supplier of the safety data sheet

Registered company name	Action Corrosion Pty Ltd	
Address	/18 Industry Drive, Tweed Heads South NSW 2486	
Telephone	1300 731 311	
Website	www.actioncorrosion.com.au	
Email	admin@actioncorrosion.com.au	

Emergency telephone number

Association / Organisation	Action Corrosion Pty Ltd
Emergency telephone numbers	1300 731 311

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Poisons Schedule	Not Applicable	
Classification ^[1]	Aerosols Category 1, Gas under Pressure (Compressed gas), Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Carcinogenicity Category 2, Reproductive Toxicity Category 2, Specific target organ toxicity - single exposure Category 3 (narcotic effects)	
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI	

Label elements

GHS label elements









SIGNAL WORD DANGER

Hazard statement(s)

H222	ktremely flammable aerosol.	
H280	Contains gas under pressure; may explode if heated.	
H332	Harmful if inhaled.	
H315	Causes skin irritation.	
H319	Causes serious eye irritation.	
H351	Suspected of causing cancer.	
H361	Suspected of damaging fertility or the unborn child.	

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Н336	May cause drowsiness or dizziness.
AUH019	May form explosive peroxides
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

P308+P313	IF exposed or concerned: Get medical advice/attention.	
P362	ake off contaminated clothing and wash before use.	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
P312 Call a POISON CENTER or doctor/physician if you feel unwell.		

Precautionary statement(s) Storage

P405	Store locked up.	
P410+P403 Protect from sunlight. Store in a well-ventilated place.		
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.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Observe the patient carefully.

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[Weight]	Name
108-88-3	10-30	<u>toluene</u>
1330-20-7	10-30	xylene
108-65-6	<10	propylene glycol monomethyl ether acetate, alpha-isomer
100-41-4	<10	ethylbenzene
108-10-1	<10	methyl isobutyl ketone
123-86-4	<10	n-butyl acetate
Not Available	1-30	Ingredients determined not to be hazardous
115-10-6	30-60	dimethyl ether

SECTION 4 FIRST AID MEASURES

Description of first aid measures	
Eye Contact	If aerosols come in contact with the eyes: Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. 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. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If solids or aerosol mists are deposited upon the skin: Flush skin and hair with running water (and soap if available). Remove any adhering solids with industrial skin cleansing cream. DO NOT use solvents. Seek medical attention in the event of irritation.
Inhalation	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. If aerosols, fumes or combustion products are inhaled: Remove to fresh air. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. 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. Transport to hospital, or doctor.
Ingestion	 Not considered a normal route of entry. If swallowed do NOT induce vomiting. If yomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

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- ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
For simple aldehydes:
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 pulmonary oedema.
- ▶ Monitor and treat, where necessary, for shock.
- ▶ 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.
- ▶ Consider intubation at first sign of upper airway obstruction resulting from oedema
- 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.
- Drug therapy should be considered for pulmonary oedema
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications
- 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 electrocardiographs
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- For Treat bronchospasm in a similar manner to that employed for reactive airway disease. Severe exposures may require inhaled corticosteroids.
- ▶ Sodium bicarbonate may correct acidosis
- Haemodialysis may assist in severely symptomatic patients.
- ► Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

For acute and short term repeated exposures to methanol:

- ► Toxicity results from accumulation of formaldehyde/formic acid.
- Clinical signs are usually limited to CNS, eyes and GI tract severe metabolic acidosis may produce dyspnea and profound systemic effects, which may become intractable. All symptomatic patients should have arterial pH measured. Evaluate airway, breathing and circulation.
- ▶ Stabilise obtunded patients by giving naloxone, glucose and thiamine.
- Decontaminate with Ipecac or lavage for patients presenting 2 hours post-ingestion. Charcoal does not absorb well; the usefulness of cathartic is not established.
- Forced diuresis is not effective; haemodialysis is recommended where peak methanol levels exceed 50 mg/dL (this correlates with serum bicarbonate levels below 18 meq/L).
- Ethanol, maintained at levels between 100 and 150 mg/dL, inhibits formation of toxic metabolites and may be indicated when peak methanol levels exceed 20 mg/dL. An intravenous solution of ethanol in D5W is optimal.
- Folate, as leucovorin, may increase the oxidative removal of formic acid. 4-methylpyrazole may be an effective adjunct in the treatment. 8.Phenytoin may be preferable to diazepam for controlling seizure.

[Ellenhorn Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

DeterminantIndexSampling TimeComment1. Methanol in urine15 mg/lEnd of shiftB, NS2. Formic acid in urine80 mg/gm creatinineBefore the shift at end of workweekB, NS

B: Background levels occur in specimens collected from subjects NOT exposed.

NS: Non-specific determinant - observed following exposure to other materials.

For acute or short term repeated exposures to xylene:

- Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- ▶ Pulmonary absorption is rapid with about 60-65% retained at rest.
- Primary threat to life from ingestion and/or inhalation is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 < 50 mm Hg or pCO2 > 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant Index Sampling Time
Methylhippu-ric acids in urine 1.5 gm/gm creatinine End of shift
2 mg/min Last 4 hrs of shift

SECTION 5 FIREFIGHTING MEASURES

Comments

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Extinguishing media

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	
Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or watercourse.
Fire/Explosion Hazard	 ▶ Liquid and vapour are highly flammable. ▶ Severe fire hazard when exposed to heat or flame. ▶ Vapour forms an explosive mixture with air. ▶ Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Combustion products include: carbon dioxide (CO2) isocyanates and minor amounts of hydrogen cyanide nitrogen oxides (NOx) other pyrolysis products typical of burning organic material. WARNING: Long standing in contact with air and light may result in the formation

SECTION 6 ACCIDENTAL RELEASE MEASURES

HAZCHEM

Personal precautions, protective equipment and emergency procedures

Not Applicable

of potentially explosive peroxides.

See section 8

Environmental precautions

See section 12

$\label{eq:methods} \mbox{Methods and material for containment and cleaning up}$

Minor Spills	 Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Wear protective clothing, impervious gloves and safety glasses. Shut off all possible sources of ignition and increase ventilation.
Major Spills	 Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear breathing apparatus plus protective gloves.

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	The substance accumulates peroxides, which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example. Purchases of peroxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised. • A responsible person should maintain an inventory of peroxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. • Avoid all personal contact, including inhalation. • Wear protective clothing when risk of exposure occurs. • Use in a well-ventilated area. • Prevent concentration in hollows and sumps.
Other information	 Store in original containers in approved flammable liquid storage area. DO NOT store in pits, depressions, basements or areas where vapours may be trapped. No smoking, naked lights, heat or ignition sources. Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	 ▶ Aerosol dispenser. ▶ Check that containers are clearly labelled.
Storage incompatibility	 Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

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Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	toluene	Toluene	191 mg/m3 / 50 ppm	574 mg/m3 / 150 ppm	Not Available	Sk
Australia Exposure Standards	xylene	Xylene (o-, m-, p- isomers)	350 mg/m3 / 80 ppm	655 mg/m3 / 150 ppm	Not Available	Not Available
Australia Exposure Standards	propylene glycol monomethyl ether acetate, alpha-isomer	1-Methoxy-2-propanol acetate	274 mg/m3 / 50 ppm	548 mg/m3 / 100 ppm	Not Available	Sk
Australia Exposure Standards	ethylbenzene	Ethyl benzene	434 mg/m3 / 100 ppm	543 mg/m3 / 125 ppm	Not Available	Not Available
Australia Exposure Standards	methyl isobutyl ketone	Methyl isobutyl ketone	205 mg/m3 / 50 ppm	307 mg/m3 / 75 ppm	Not Available	Not Available
Australia Exposure Standards	n-butyl acetate	n-Butyl acetate	713 mg/m3 / 150 ppm	950 mg/m3 / 200 ppm	Not Available	Not Available
Australia Exposure Standards	dimethyl ether	Dimethyl ether	760 mg/m3 / 400 ppm	950 mg/m3 / 500 ppm	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
toluene	Toluene	Not Available	Not Available	Not Available
xylene	Xylenes	Not Available	Not Available	Not Available
propylene glycol monomethyl ether acetate, alpha-isomer	Propylene glycol monomethyl ether acetate, alpha-isomer; (1-Methoxypropyl-2-acetate)	Not Available	Not Available	Not Available
propylene glycol monomethyl ether acetate, alpha-isomer	Propylene glycol monomethyl ether acetate, beta-isomer; (2-Methoxypropoyl-1-acetate)	Not Available	Not Available	Not Available
ethylbenzene	Ethyl benzene	Not Available	Not Available	Not Available
methyl isobutyl ketone	Methyl isobutyl ketone; (Hexone)	75 ppm	500 ppm	3000 ppm
n-butyl acetate	Butyl acetate, n-	Not Available	Not Available	Not Available
dimethyl ether	Methyl ether; (Dimethyl ether)	3,000 ppm	3800 ppm	7200 ppm

Ingredient	Original IDLH	Revised IDLH
toluene	2,000 ppm	500 ppm
xylene	1,000 ppm	900 ppm
propylene glycol monomethyl ether acetate, alpha-isomer	Not Available	Not Available
ethylbenzene	2,000 ppm	800 [LEL] ppm
methyl isobutyl ketone	3,000 ppm	500 ppm
n-butyl acetate	10,000 ppm	1,700 [LEL] ppm
Ingredients determined not to be hazardous	Not Available	Not Available
dimethyl ether	Not Available	Not Available

MATERIAL DATA

Exposure controls

Appropriate 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. The basic types of engineering controls are: Process controls that involve changing the way a job activity or process is done to reduce the risk. 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.

Personal protection



Eye and face protection

No special equipment for minor exposure i.e. when handling small quantities.

OTHERWISE: For potentially moderate or heavy exposures:

- Safety glasses with side shields.
- ▶ NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.

Skin protection

See Hand protection below

NOT

• 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.

Hands/feet protection

- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
- No special equipment needed when handling small quantities.
- OTHERWISE:
- ▶ For potentially moderate exposures:

	 Wear general protective gloves, eg. light weight rubber gloves. For potentially heavy exposures: Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. OTHERWISE: Overalls. Skin cleansing cream. Eyewash unit. 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. Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost. BRETHERICK: Handbook of Reactive Chemical Hazards.
Thermal hazards	Not Available

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 $\emph{computer-}$ generated selection:

5209 MCU UV Clear in Aerosols

Material	СРІ
##n-butyl	acetate
BUTYL	С
BUTYL/NEOPRENE	С
CPE	С
HYPALON	С
NAT+NEOPR+NITRILE	С
NATURAL RUBBER	С
NATURAL+NEOPRENE	С
NEOPRENE	С
NEOPRENE/NATURAL	С
NITRILE	С
NITRILE+PVC	С
PE	С
PE/EVAL/PE	С
PVA	С
PVC	С
PVDC/PE/PVDC	С
SARANEX-23	С
SARANEX-23 2-PLY	С
TEFLON	С
VITON	С
VITON/BUTYL	С
VITON/CHLOROBUTYL	С
VITON/NEOPRENE	С
##dimethyl	ether
##methyl isobutyl	ketone

* 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.

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 5 x ES	AX-AUS / Class 1 P2	-	AX-PAPR-AUS / Class 1 P2
up to 25 x ES	Air-line*	AX-2 P2	AX-PAPR-2 P2
up to 50 x ES	-	AX-3 P2	-
50+ x ES	-	Air-line**	-

^{* -} Continuous-flow; ** - Continuous-flow or positive pressure demand

^ - 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(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties Supplied as an aerosol pack. Contents under PRESSURE. Contains highly flammable ether propellant. Appearance Extremely flammable aerosol liquid; does not mix with water Physical state Liquid Relative density (Water = 1) Not Available

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

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	 Elevated temperatures. Presence of open flame. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertices.

Common, generalised symptoms associated with toxic gas inhalation include:

- ▶ central nervous system effects such as depression, headache, confusion, dizziness, progressive stupor, coma and seizures;
- respiratory system complications may include acute pulmonary oedema, dyspnoea, stridor, tachypnoea, bronchospasm, wheezing and other reactive airway symptoms, and respiratory arrest;
- ▶ cardiovascular effects may include cardiovascular collapse, arrhythmias and cardiac arrest;
- gastrointestinal effects may also be present and may include mucous membrane irritation, nausea and vomiting (sometimes bloody), and abdominal pain. Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination

WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.

Ingestion

Inhaled

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.

Not normally a hazard due to physical form of product.

Considered an unlikely route of entry in commercial/industrial environments

The material produces mild skin irritation; evidence exists, or practical experience predicts, that the material either

▶ produces mild inflammation of the skin in a substantial number of individuals following direct contact, and/or

• produces significant, but mild, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period.

Skin Contact

Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

Spray mist may produce discomfort

Entry into the blood stream through, for example, cuts, abrasions, puncture wounds 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.

Eve

Limited evidence or practical experience suggests, that the material may cause moderate eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged exposure may cause moderate inflammation (similar to windburn) characterised by a temporary redness of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.

Chronic

Exposure to the material may cause concerns for humans owing to possible developmental toxic effects, generally on the basis that results in appropriate animal studies provide strong suspicion of developmental toxicity in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of other toxic effects.

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Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. There exists limited evidence that shows that skin contact with the material is capable either of inducing a sensitisation reaction in a significant number of individuals, and/or of producing positive response in experimental animals.

Repeated exposure to higher concentrations of propylene glycol monomethyl ether acetate (PGMEA) (1000 ppm and above) causes mild liver and kidney damage in animals.

A minor component, 2-methoxy-1-propyl acetate (the beta-isomer) produced birth defects on inhalation exposure of pregnant rabbits at 545 ppm, but not at 145 or 36 ppm; maternal and embryo/foetal toxicity on inhalation exposure of pregnant rats at 2710 ppm, but not at 545 or 110 ppm; and no adverse effects on dermal exposure of pregnant rabbits at applied dosages of 1000 and 2000 mg/kg of body weight per day during the critical period or embryo/foetal development. In a further study, no developmental effects were seen following exposure of pregnant rats at air concentrations of commercial propylene glycol monomethyl ether acetate (containing 3-5% of the minor component) up to 4000 ppm; slight maternal effects were seen at 5000 ppm and greater.

Exposure of pregnant rats and rabbits to the parent glycol ether, propylene glycol monomethyl ether which contained comparable amounts of the primary isomer, 2-methoxy-1-propanol, did not produce teratogenic effects at concentrations up to 3000 ppm.

Principal route of occupational exposure to the gas is by inhalation.

Chronic toluene habituation occurs following intentional abuse (glue sniffing) or from occupational exposure. Ataxia, incoordination and tremors of the hands and feet (as a consequence of diffuse cerebral atrophy), headache, abnormal speech, transient memory loss, convulsions, coma, drowsiness, reduced colour perception, frank blindness, nystagmus (rapid, involuntary eye-movements), hearing loss leading to deafness and mild dementia have all been associated with chronic abuse. Peripheral nerve damage, encephalopathy, giant axonopathy electrolyte disturbances in the cerebrospinal fluid and abnormal computer tomographic (CT scans) are common amongst toluene addicts. Although toluene abuse has been linked with kidney disease, this does not commonly appear in cases of occupational toluene exposures.

Aliphatic aldehydes may be dermal sensitisers.

WARNING: Aerosol containers may present pressure related hazards.

Long-term exposure to methanol vapour, at concentrations exceeding 3000 ppm, may produce cumulative effects characterised by gastrointestinal disturbances (nausea, vomiting), headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, conjunctivitis and clouded or double vision. Liver and/or kidney injury may also result. Some individuals show severe eye damage following prolonged exposure to 800 ppm of the vapour.

Prolonged or repeated contact with xylenes may cause defatting dermatitis with drying and cracking. Chronic inhalation of xylenes has been associated with central nervous system effects, loss of appetite, nausea, ringing in the ears, irritability, thirst anaemia, mucosal bleeding, enlarged liver and hyperplasia. Exposure may produce kidney and liver damage. In chronic occupational exposure, xylene (usually mix ed with other solvents) has produced irreversible damage to the central nervous system and ototoxicity (damages hearing and increases sensitivity to noise), probably due to neurotoxic mechanisms.

5209 MCU UV Clear in	TOXICITY	IRRITATION
Aerosols	Not Available	Not Available
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 12124 mg/kg ^[2]	Eye (rabbit): 2mg/24h - SEVERE
toluene	Inhalation (rat) LC50: >26700 ppm/1hr ^[2]	Eye (rabbit):0.87 mg - mild
toluene	Inhalation (rat) LC50: 49 mg/L/4hr ^[2]	Eye (rabbit):100 mg/30sec - mild
	Oral (rat) LD50: 636 mg/kg ^[2]	Skin (rabbit):20 mg/24h-moderate
		Skin (rabbit):500 mg - moderate
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1700 mg/kg ^[2]	Eye (human): 200 ppm irritant
xylene	Inhalation (rat) LC50: 5000 ppm/4hr ^[2]	Eye (rabbit): 5 mg/24h SEVERE
	Oral (rat) LD50: 4300 mg/kg ^[2]	Eye (rabbit): 87 mg mild
		Skin (rabbit):500 mg/24h moderate
	TOXICITY	IRRITATION
propylene glycol	dermal (rat) LD50: >2000 mg/kg ^[1]	Not Available
monomethyl ether acetate, alpha-isomer	Inhalation (rat) LC50: 4345 ppm/6hr ^[2]	
	Oral (rat) LD50: >14.1 ml ^[1]	
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: ca.15432.6 mg/kg ^[1]	Eye (rabbit): 500 mg - SEVERE
ethylbenzene	Inhalation (mouse) LC50: 35.5 mg/L/2hr ^[2]	Skin (rabbit): 15 mg/24h mild
	Inhalation (rat) LC50: 55 mg/L/2hr ^[2]	
	Oral (rat) LD50: 3500 mg/kg ^[2]	
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >16000 mg/kg ^[1]	Eye (human): 200 ppm/15m
methyl isobutyl ketone	Oral (rat) LD50: 2984 mg/kg ^[1]	Eye (rabbit): 40 mg - SEVERE
		Eye (rabbit): 500 mg/24h - mild
		Skin (rabbit): 500 mg/24h - mild
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >14080 mg/kg ^[1]	Eye (human): 300 mg
n-butyl acetate	Inhalation (rat) LC50: 2000 ppm/4hr ^[2]	Eye (rabbit): 20 mg (open)-SEVERE
	Inhalation (rat) LC50: 390 ppm/4hr ^[2]	Eye (rabbit): 20 mg/24h - moderate

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	Oral (rat) LD50: 10736 mg/kg ^[1]	Skin (rabbit): 50	0 mg/24h-moderate
discontinui attanza	тохісіту	IRRITATION	
dimethyl ether	Inhalation (rat) LC50: 309 mg/L/4hr ^[2]	Not Available	
Legend:	Value obtained from Europe ECHA Registered Substance extracted from RTECS - Register of Toxic Effect of chem	-	om manufacturer's SDS. Unless otherwise specified data
TOLUENE	For toluene: Acute Toxicity Humans exposed to intermediate to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis, and death. Similar effects are observed in short-term animal studies. Humans - Toluene ingestion or inhalation can result in severe central nervous system depression, and in large doses, can act as a narcotic. The ingestion of about 60 mL resulted in fatal nervous system depression within 30 minutes in one reported case.		
XYLENE	The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. Reproductive effector in rats		
PROPYLENE GLYCOL MONOMETHYL ETHER CETATE, ALPHA-ISOMER	for propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA); tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. The common toxicities associated with he lower molecular weight homologues of the ethylene series, such as adverse effects on reproductive organs, the developing embryo and fetus, blood (haemolytic effects), or thymus, are not seen with the commercial-grade propylene glycol ethers. In the ethylene series, metabolism of the terminal hydroxyl group produces an alkoxyacetic acid. A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. Hazard appears low but emphasizes the need for care in handling this chemical. [I.C.I]		
	A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. Hazard appears low but emphasizes the need for care in handling this chemical. [I.C.I] *Shin-Etsu SDS		
ETHYLBENZENE	Ethylbenzene is readily absorbed following inhalation, oral, and dermal exposures, distributed throughout the body, and excreted primarily through urine. There are two different metabolic pathways for ethylbenzene with the primary pathway being the alpha-oxidation of ethylbenzene to 1-phenylethanol, mostly as the R-enantiomer. The pattern of urinary metabolite excretion varies with different mammalian species. In humans, ethylbenzene is excreted in the urine as mandelic acid and phenylgloxylic acids; whereas rats and rabbits excrete hippuric acid and phenaceturic acid as the main metabolites. NOTE: 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. Liver changes, utheral tract, effects on fertility, foetotoxicity, specific developmental abnormalities (musculoskeletal system) recorded.		
METHYL ISOBUTYL KETONE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS), which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. For methyl isobutyl ketone (MIBK): MIBK is primarily absorbed by the lungs in animals and humans; it can however be absorbed by the gastrointestinal system and through skin. In two cases involving individuals exposed to the vapour MIBK was found in the brain, liver, lung, vitreous fluid, kidney and blood. Experiments in guinea pigs show that MIBK is metabolised to 4-hydroxy-4-methyl-2-pentanone and 4-methyl-2-pentanol. Ketones are generally excreted rapidly in expired air.		
TOLUENE & XYLENE & N-BUTYL ACETATE	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.		
XYLENE & ETHYLBENZENE & N-BUTYL ACETATE	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.		
ETHYLBENZENE & METHYL ISOBUTYL KETONE	The material may cause skin irritation after prolonged or repe characterised by skin redness (erythema) and swelling epide intracellular oedema of the epidermis.		
ETHYLBENZENE & METHYL ISOBUTYL KETONE	WARNING: This substance has been classified by the IA	ARC as Group 2B: Possibly Carcino	genic to Humans.
Acute Toxicity	~	Carcinogenicity	✓
Skin Irritation/Corrosion	*	Reproductivity	*
Serious Eye Damage/Irritation	*	STOT - Single Exposure	*
Respiratory or Skin sensitisation	0	STOT - Repeated Exposure	0

O – Data Not Available to make classification

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
toluene	LC50	96	Fish	0.0073mg/L	4
toluene	EC50	48	Crustacea	3.78mg/L	5
toluene	EC50	72	Algae or other aquatic plants	12.5mg/L	4
toluene	BCF	24	Algae or other aquatic plants	10mg/L	4
toluene	EC50	384	Crustacea	1.533mg/L	3
toluene	NOEC	168	Crustacea	0.74mg/L	5
xylene	LC50	96	Fish	2.6mg/L	2
xylene	EC50	48	Crustacea	>3.4mg/L	2
xylene	EC50	72	Algae or other aquatic plants	4.6mg/L	2
xylene	EC50	24	Crustacea	0.711mg/L	4
xylene	NOEC	73	Algae or other aquatic plants	0.44mg/L	2
propylene glycol monomethyl ether acetate, alpha-isomer	LC50	96	Fish	100mg/L	1
propylene glycol monomethyl ether acetate, alpha-isomer	EC50	48	Crustacea	=408mg/L	1
propylene glycol monomethyl ether acetate, alpha-isomer	EC50	96	Algae or other aquatic plants	9.337mg/L	3
propylene glycol monomethyl ether acetate, alpha-isomer	EC0	24	Crustacea	=500mg/L	1
propylene glycol monomethyl ether acetate, alpha-isomer	NOEC	336	Fish	47.5mg/L	2
ethylbenzene	LC50	96	Fish	0.0043mg/L	4
ethylbenzene	EC50	48	Crustacea	1.184mg/L	4
ethylbenzene	EC50	96	Algae or other aquatic plants	3.6mg/L	2
ethylbenzene	EC50	96	Crustacea	=0.49mg/L	1
ethylbenzene	NOEC	168	Crustacea	0.96mg/L	5
methyl isobutyl ketone	LC50	96	Fish	69.808mg/L	3
methyl isobutyl ketone	EC50	48	Crustacea	=170mg/L	1
methyl isobutyl ketone	EC50	96	Algae or other aquatic plants	275.488mg/L	3
methyl isobutyl ketone	EC50	384	Crustacea	16.425mg/L	3
methyl isobutyl ketone	NOEC	504	Crustacea	30mg/L	2
n-butyl acetate	LC50	96	Fish	18mg/L	2
n-butyl acetate	EC50	48	Crustacea	=32mg/L	1
n-butyl acetate	EC50	96	Algae or other aquatic plants	1.675mg/L	3
n-butyl acetate	EC50	96	Fish	18mg/L	2
dimethyl ether	LC50	96	Fish	200.592mg/L	3
limethyl ether	EC50	48	Crustacea	>4400.0mg/L	2
dimethyl ether	EC50	96	Algae or other aquatic plants	1168.058mg/L	3
dimethyl ether	EC50	384	Crustacea	46.027mg/L	3
dimethyl ether	NOEC	48	Crustacea	>4000mg/L	1
Legend:	(QSAR) - Aquatic Toxic		rigistered Substances - Ecotoxicological Inform ptox database - Aquatic Toxicity Data 5. ECE ntration Data 8. Vendor Data		

DO NOT discharge into sewer or waterways.

Persistence and degradability

reisistence and degradability				
Ingredient	Persistence: Water/Soil	Persistence: Air		
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)		
xylene	HIGH (Half-life = 360 days)	LOW (Half-life = 1.83 days)		
propylene glycol monomethyl ether acetate, alpha-isomer	LOW	LOW		
ethylbenzene	HIGH (Half-life = 228 days)	LOW (Half-life = 3.57 days)		
methyl isobutyl ketone	HIGH (Half-life = 7001 days)	LOW (Half-life = 1.9 days)		
n-butyl acetate	LOW	LOW		
dimethyl ether	LOW	LOW		

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Bioaccumulative potential

Ingredient	Bioaccumulation
toluene	LOW (BCF = 90)
xylene	MEDIUM (BCF = 740)
propylene glycol monomethyl ether acetate, alpha-isomer	LOW (LogKOW = 0.56)
ethylbenzene	LOW (BCF = 79.43)
methyl isobutyl ketone	LOW (LogKOW = 1.31)
n-butyl acetate	LOW (BCF = 14)
dimethyl ether	LOW (LogKOW = 0.1)

Mobility in soil

Ingredient	Mobility
toluene	LOW (KOC = 268)
propylene glycol monomethyl ether acetate, alpha-isomer	HIGH (KOC = 1.838)
ethylbenzene	LOW (KOC = 517.8)
methyl isobutyl ketone	LOW (KOC = 10.91)
n-butyl acetate	LOW (KOC = 20.86)
dimethyl ether	HIGH (KOC = 1.292)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging

- ▶ DO NOT allow wash water from cleaning or process equipment to enter drains.
- ▶ It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- ▶ Where in doubt contact the responsible authority.
- ► Consult State Land Waste Management Authority for disposal.
- ▶ Discharge contents of damaged aerosol cans at an approved site.
- ► Allow small quantities to evaporate.
- ► DO NOT incinerate or puncture aerosol cans.

SECTION 14 TRANSPORT INFORMATION

disposal

Labels Required

	2
Marine Pollutant	NO

HAZCHEM

Not Applicable

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)

UN number	1950
UN proper shipping name	Aerosols, flammable; Aerosols, flammable (engine starting fluid)
Transport hazard class(es)	ICAO/IATA Class 2.1 ICAO / IATA Subrisk Not Applicable ERG Code 10L
Packing group	Not Applicable

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Environmental hazard	Not Applicable	
Environmental hazard Special precautions for user	Not Applicable Special provisions Cargo Only Packing Instructions Cargo Only Maximum Qty / Pack Passenger and Cargo Packing Instructions Passenger and Cargo Maximum Qty / Pack Passenger and Cargo Limited Quantity Packing Instructions	A145A167A802; A1A145A167A802 203 150 kg 203; Forbidden 75 kg; Forbidden Y203; Forbidden
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G; Forbidden

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 63 190 277 327 344 959 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 / legislatio	n specific for the substan	ce or mixture
ouicty, neutri and crivilorinicital	regulations / legislatio	ii specilie ioi tile substan	CC OI IIIIALUIC

Australia Exposure Standards	Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists	

XYLENE(1330-20-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER(108-65-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

ETHYLBENZENE(100-41-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

METHYL ISOBUTYL KETONE(108-10-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards
Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists

N-BUTYL ACETATE(123-86-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

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

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List
Passenger and Cargo Aircraft

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (toluene; propylene glycol monomethyl ether acetate, alpha-isomer; xylene; n-butyl acetate; dimethyl ether; ethylbenzene; methyl isobutyl ketone)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y

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Philippines - PICCS	Y
USA - TSCA	Y
Legend:	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

Other information

Ingredients with multiple cas numbers

Name	CAS No
propylene glycol monomethyl ether acetate, alpha-isomer	108-65-6, 84540-57-8, 142300-82-1
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

 ${\sf PC-TWA: Permissible \ Concentration-Time \ Weighted \ Average \ PC-}$ 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 OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index

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