

## A-Gas Solvokane

### A-Gas (Australia) Pty Ltd

Chemwatch: 4838-93

Version No: 5.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 01/11/2019

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L.GHS.AUS.EN

## SECTION 1 Identification of the substance / mixture and of the company / undertaking

### Product Identifier

Product name	A-Gas Solvokane
Synonyms	Not Available
Other means of identification	Not Available

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

Relevant identified uses	Aerosol propellants; Cleaning agent; Detergent; Electrical industry; Electronic industry. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
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### Details of the supplier of the safety data sheet

Registered company name	A-Gas (Australia) Pty Ltd
Address	9-11 Oxford Rd, Laverton North Victoria 3026 Australia
Telephone	93689208
Fax	Not Available
Website	Not Available
Email	Not Available

### Emergency telephone number


Association / Organisation	TOLL CHEMICAL LOGISTICS
Emergency telephone numbers	1800024973
Other emergency telephone numbers	Not Available

## SECTION 2 Hazards identification

### Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification <sup>[1]</sup>	Acute Toxicity (Oral) Category 4, Specific target organ toxicity - single exposure Category 3 (narcotic effects), Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### Label elements

Hazard pictogram(s)	
Signal word	Warning

### Hazard statement(s)

H302	Harmful if swallowed.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.
AUH018	In use, may form flammable/explosive vapour/air mixture.

AUH019	May form explosive peroxides.
<b>Precautionary statement(s) General</b>	
P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.
<b>Precautionary statement(s) Prevention</b>	
P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
<b>Precautionary statement(s) Response</b>	
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P330	Rinse mouth.
<b>Precautionary statement(s) Storage</b>	
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
<b>Precautionary statement(s) Disposal</b>	
P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
406-58-6	>65	<u>365 mfc</u>
156-60-5	<35	<u>trans-acetylene dichloride</u>

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"><li>▸ Wash out immediately 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>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li><li>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li></ul>
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"><li>▸ Immediately remove all contaminated clothing, including footwear.</li><li>▸ Flush skin and hair with running water (and soap if available).</li><li>▸ Seek medical attention in event of irritation.</li></ul>
Inhalation	<ul style="list-style-type: none"><li>▸ If fumes or combustion products are inhaled remove from contaminated area.</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><li>▸ Apply artificial respiration if not breathing, 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>
Ingestion	<ul style="list-style-type: none"><li>▸ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li><li>▸ For advice, contact a Poisons Information Centre or a doctor.</li><li>▸ Urgent hospital treatment is likely to be needed.</li><li>▸ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li><li>▸ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</li><li>▸ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li></ul>

Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

- **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

**NOTE:** Wear a protective glove when inducing vomiting by mechanical means.

- Avoid giving milk or oils.
- Avoid giving alcohol.

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

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).

For poisons (where specific treatment regime is absent):

### 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.
- Anticipate 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.

### 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.
- 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.

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

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

Treat symptomatically.

for intoxication due to Freons/ Halons;

A: Emergency and Supportive Measures

- Maintain an open airway and assist ventilation if necessary
- Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
- Monitor the ECG for 4-6 hours

B: Specific drugs and antidotes:

- There is no specific antidote

C: Decontamination

- Inhalation; remove victim from exposure, and give supplemental oxygen if available.
- Ingestion; (a) Prehospital: Administer activated charcoal, if available. **DO NOT** induce vomiting because of rapid absorption and the risk of abrupt onset CNS depression. (b) Hospital: Administer activated charcoal, although the efficacy of charcoal is unknown. Perform gastric lavage only if the ingestion was very large and recent (less than 30 minutes)

D: Enhanced elimination:

- There is no documented efficacy for diuresis, haemodialysis, haemoperfusion, or repeat-dose charcoal.

*POISONING and DRUG OVERDOSE, Californian Poison Control System Ed. Kent R Olson; 3rd Edition*

- Do not administer sympathomimetic drugs unless absolutely necessary as material may increase myocardial irritability.
- No specific antidote.
- Because rapid absorption may occur through lungs if aspirated and cause systematic effects, the decision of whether to induce vomiting or not should be made by an attending physician.
- If lavage is performed, suggest endotracheal and/or esophageal control.
- Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.
- Treatment based on judgment of the physician in response to reactions of the patient
- Acute exposures to carbon tetrachloride present, initially, with CNS depression followed by hepatic and renal dysfunction.
- Respiratory depression and cardiac dysrhythmias are an immediate threat to life.
- Since a major fraction of absorbed carbon tetrachloride is exhaled in the first hour, good tidal volumes should be maintained in severely poisoned patients; hyperventilation may be an additional therapeutic modality.
- Ipecac syrup, lavage, activated charcoal or catharsis may all be used in the first 4 hours.
- Since reactive metabolites may cause hepatorenal toxicity, administration of N-acetyl-L-cysteine may reduce complications. Experience with this therapy is limited. [Ellenhorn and Barceloux: Medical Toxicology]

**DO NOT** administer sympathomimetic drugs as they may cause ventricular arrhythmias.

SECTION 5 Firefighting measures

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

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
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"><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 any means available, spillage from entering drains or water course.</li><li>▸ Use water delivered as a fine spray to control fire and cool adjacent area.</li></ul>
Fire/Explosion Hazard	<p><b>WARNING:</b></p> <ul style="list-style-type: none"><li>▸ Can become highly flammable in use.</li><li>▸ Avoid evaporation.</li></ul> <p><b>WARNING:</b> In use may form flammable/ explosive vapour-air mixtures.</p> <ul style="list-style-type: none"><li>▸ Combustible.</li><li>▸ Slight fire hazard when exposed to heat or flame.</li><li>▸ Heating may cause expansion or decomposition leading to violent rupture of containers.</li><li>▸ On combustion, may emit toxic fumes of carbon monoxide (CO).</li></ul> <p>Combustion products include: carbon dioxide (CO2) hydrogen chloride phosgene hydrogen fluoride other pyrolysis products typical of burning organic material.</p> <p><b>Contains low boiling substance:</b> Closed containers may rupture due to pressure buildup under fire conditions. May emit poisonous fumes. May emit corrosive fumes.</p>
HAZCHEM	Not Applicable

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

Minor Spills	<ul style="list-style-type: none"><li>▶ Remove all ignition sources.</li><li>▶ Clean up all spills immediately.</li><li>▶ Avoid breathing vapours and contact with skin and eyes.</li><li>▶ Control personal contact with the substance, by using protective equipment.</li></ul>					
Major Spills	Chemical Class: aliphatics, halogenated					
	For release onto land: recommended sorbents listed in order of priority.					
	SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS	
	LAND SPILL - SMALL					
	cross-linked polymer - particulate	1	shovel	shovel	R, W, SS	
	cross-linked polymer - pillow	1	throw	pitchfork	R, DGC, RT	
	wood fiber - pillow	2	throw	pitchfork	R, P, DGC, RT	
	treated wood fibre - particulate	2	shovel	shovel	R, W, DGC	
	sorbent clay - particulate	3	shovel	shovel	R, I, P	
	foamed glass - pillow	3	throw	pitchfork	R, P, DGC, RT	
	LAND SPILL - MEDIUM					
	cross-linked polymer - particulate	1	blower	skiploader	R,W, SS	
	cross-linked polymer - pillow	2	throw	skiploader	R, DGC, RT	
	sorbent clay - particulate	3	blower	skiploader	R, I, P	
polypropylene - particulate	3	blower	skiploader	W, SS, DGC		

	foamed glass - pillow	3	throw	skiploader	R, P, DGC, RT
	expanded mineral - particulate	4	blower	skiploader	R, I, W, P, DGC
<p>Legend</p> <p>DGC: Not effective where ground cover is dense</p> <p>R; Not reusable</p> <p>I: Not incinerable</p> <p>P: Effectiveness reduced when rainy</p> <p>RT: Not effective where terrain is rugged</p> <p>SS: Not for use within environmentally sensitive sites</p> <p>W: Effectiveness reduced when windy</p> <p>Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control; R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988</p> <p>Moderate hazard.</p> <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 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

Safe handling	<ul style="list-style-type: none"> <li><b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> <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> <p><b>Contains low boiling substance:</b></p> <p>Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.</p> <ul style="list-style-type: none"> <li>Check for bulging containers.</li> <li>Vent periodically</li> <li>Always release caps or seals slowly to ensure slow dissipation of vapours</li> </ul>
Other information	<ul style="list-style-type: none"> <li>Store in original containers.</li> <li>Keep containers securely sealed.</li> <li>No smoking, naked lights or ignition sources.</li> <li>Store in a cool, dry, well-ventilated area.</li> </ul>

### Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> <li><b>DO NOT use aluminium or galvanised containers</b></li> <li>Metal can or drum</li> <li>Packaging as recommended by manufacturer.</li> <li>Check all containers are clearly labelled and free from leaks.</li> </ul>
Storage incompatibility	<ul style="list-style-type: none"> <li>Avoid reaction with oxidising agents</li> </ul> <p>Segregate from:</p> <ul style="list-style-type: none"> <li>powdered metals such as aluminium, zinc and</li> <li>alkali metals such as sodium, potassium and lithium.</li> </ul> <p>May attack, soften or dissolve rubber, many plastics, paints and coatings</p> <p>Haloalkanes:</p> <ul style="list-style-type: none"> <li>are highly reactive:some of the more lightly substituted lower members are highly flammable; the more highly substituted may be used as fire suppressants, not always with the anticipated results.</li> <li>may react with the lighter divalent metals to produce more reactive compounds analogous to Grignard reagents.</li> <li>may produce explosive compounds following prolonged contact with metallic or other azides</li> <li>may react on contact with potassium or its alloys - although apparently stable on contact with a wide rage of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact; severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures .</li> </ul> <p>BREThERICK L.: Handbook of Reactive Chemical Hazards</p> <ul style="list-style-type: none"> <li>react with metal halides and active metals, eg. sodium (Na), potassium (K), lithium (Li),calcium (Ca), zinc (Zn), powdered aluminium (Al) and aluminium alloys, magnesium (Mg) and magnesium alloys.</li> <li>Haloalkenes are highly reactive.</li> <li>Some of the more lightly substituted lower members are highly flammable; many members of the group are peroxidisable and polymerisable.</li> <li>Avoid reaction or contact with potassium or its alloys - although apparently stable on contact with a wide rage of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact. Severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures.</li> <li>Haloacetylenes should be used with exceptional precautions.</li> <li>Explosions may occur during distillation when bath temperatures are too high or if air is admitted to a hot vacuum-distillation as evidenced by experience with bromoacetylenes.</li> </ul> <p>BREThERICK L.: Handbook of Reactive Chemical Hazards</p> <ul style="list-style-type: none"> <li>Avoid magnesium, aluminium and their alloys, brass and steel.</li> </ul>

## SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
trans-acetylene dichloride	Dichloroethylene, trans-1,2-	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
365 mfc	Not Available	Not Available
trans-acetylene dichloride	Not Available	Not Available

Occupational Exposure Banding


Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
trans-acetylene dichloride	E	≤ 0.1 ppm

Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.
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MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable.

Exposure controls

Appropriate engineering controls	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 which 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	<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>
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"><li>▸ Wear chemical protective gloves, e.g. PVC.</li><li>▸ Wear safety footwear or safety gumboots, e.g. Rubber</li></ul> The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"><li>▸ Overalls.</li><li>▸ P.V.C apron.</li><li>▸ Barrier cream.</li><li>▸ Skin cleansing cream.</li></ul>

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:  
A-Gas Solvokane

Material	CPI
VITON	C

Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)			
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.			
Required minimum	Maximum gas/vapour concentration present in air	Half-face Respirator	Full-Face Respirator

\* 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.

protection factor	p.p.m. (by volume)		
up to 10	1000	AX-AUS / Class1	-
up to 50	1000	-	AX-AUS / Class 1
up to 50	5000	Airline *	-
up to 100	5000	-	AX-2
up to 100	10000	-	AX-3
100+			Airline**

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand

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

Appearance	Colourless liquid with an ether-like odour; partly soluble in water.		
Physical state	Liquid	Relative density (Water = 1)	1.225
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)	-43 (freezing point)	Viscosity (cSt)	0.53 mPa.s @ 25 deg.C
Initial boiling point and boiling range (°C)	36	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	9.4	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	5.4	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	5400 @ 20 deg.C	Gas group	Not Available
Solubility in water	Partly miscible	pH as a solution (1%)	6 (1.7 g/l)
Vapour density (Air = 1)	>1	VOC g/L	Not Available

## SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"><li>▶ Unstable in the presence of incompatible materials.</li><li>▶ Product is considered stable.</li><li>▶ Hazardous polymerisation will not occur.</li></ul>
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

Inhaled	<p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.</p> <p>Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.</p> <p>Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the</p>
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	<p>lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>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</p> <p>Exposure to high concentrations of fluorocarbons may produce cardiac arrhythmias or cardiac arrest due sensitisation of the heart to adrenalin or noradrenalin. Deaths associated with exposures to fluorocarbons (specifically halogenated aliphatics) have occurred in occupational settings and in inhalation of bronchodilator drugs.</p> <p>Bronchospasm consistently occurs in human subjects inhaling fluorocarbons. At a measured concentration of 1700 ppm of one of the commercially available aerosols there is a biphasic change in ventilatory capacity, the first reduction occurring within a few minutes and the second delayed up to 30 minutes.</p> <p>Depression of the central nervous system is the most outstanding effect of most halogenated aliphatic hydrocarbons. Inebriation and excitation, passing into narcosis, is a typical reaction. In severe acute exposures there is always a danger of death from respiratory failure or cardiac arrest due to a tendency to make the heart more susceptible to catecholamines (adrenalin)</p> <p>Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved.</p>
<b>Ingestion</b>	<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>Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.</p>
<b>Skin Contact</b>	<p>The material may produce moderate skin irritation; limited evidence or practical experience suggests, that the material either:</p> <ul style="list-style-type: none"> <li>▸ produces moderate inflammation of the skin in a substantial number of individuals following direct contact and/or</li> <li>▸ produces significant, but moderate, 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.</li> </ul> <p>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.</p> <p>In common with other halogenated aliphatics, fluorocarbons may cause dermal problems due to a tendency to remove natural oils from the skin causing irritation and the development of dry, sensitive skin. They do not appear to be appreciably absorbed.</p> <p>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.</p>
<b>Eye</b>	<p>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.</p> <p>The vapour when concentrated has pronounced eye irritation effects and this gives some warning of high vapour concentrations. If eye irritation occurs seek to reduce exposure with available control measures, or evacuate area.</p>
<b>Chronic</b>	<p>On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body 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.</p> <p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p> <p>It is generally accepted that the fluorocarbons are less toxic than the corresponding halogenated aliphatic based on chlorine. Repeated inhalation exposure to the fluorocarbon FC-11 does not produce pathologic lesions of the liver and other visceral organs in experimental animals. There has been conjecture in non-scientific publications that fluorocarbons may cause leukemia, cancer, sterility and birth defects; these have not been verified by current research. The high incidence of cancer, spontaneous abortion and congenital anomalies amongst hospital personnel, repeatedly exposed to fluorine-containing general anaesthetics, has caused some scientists to call for a lowering of the fluorocarbon exposure standard to 5 ppm since some are mutagens.</p> <p>Halogenated oxiranes may arise following epoxidation of haloalkenes.</p> <p>The metabolism of haloethylenes by microsomal oxidation leading to epoxide formation across the double bond has been proposed. The resulting oxiranes are highly reactive and may covalently bind to nucleic acids leading to mutations and possible cancers A measure of such potential carcinogenicity is the development of significant preneoplastic foci in livers of treated rats.</p> <p>The carcinogenicity of halogenated oxiranes may lie in the reactivity of an epoxide intermediate.</p>

<b>A-Gas Solvokane</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>365 mfc</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >2000 mg/kg <sup>[2]</sup>	Eye (rabbit): slight irritant * Skin (rabbit): non-irritating *
<b>trans-acetylene dichloride</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	4800 mg/kg <sup>[2]</sup>	Eye (rabbit): 10 mg - moderate
	75000 mg/kg <sup>[2]</sup>	SKIN (RABBIT): 500 MG/24H - moderate
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup> Inhalation (rat) LC50: 24072.5019 mg/l/4H <sup>[2]</sup>	



	Oral (mouse) LD50: 2122 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 1235 mg/kg <sup>[2]</sup>	
<b>Legend:</b>	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	

365 MFC	<p>Non-sensitising on guinea pig skin.* * Solvay MSDS</p> <p>Disinfection by products (DBPs) re formed when disinfectants such as chlorine, chloramine, and ozone react with organic and inorganic matter in water. The observations that some DBPs such as trihalomethanes (THMs), di-/trichloroacetic acids, and 3-chloro-4-(dichloromethyl)-5-hydroxy-2(5H)-furanone (MX) are carcinogenic in animal studies have raised public concern over the possible adverse health effects of DBPs. To date, several hundred DBPs have been identified.</p> <p>Numerous haloalkanes and haloalkenes have been tested for carcinogenic and mutagenic activities. n general, the genotoxic potential is dependent on the nature, number, and position of halogen(s) and the molecular size of the compound.</p>
TRANS-ACETYLENE DICHLORIDE	<p>for dichloroethylene:</p> <p><b>Acute toxicity:</b> trans-1, 2-dichloroethylene showed low acute toxicity in several published data.</p> <p><b>Repeat dose toxicity:</b> Several subchronic studies in rodents have been conducted to evaluate the toxicity of trans-1, 2-dichloroethylene. In an inhalation study where groups of rats were exposed whole body for 6 hours/day, 5 days/week for 90 days, the NOEL (no observed effect level) was 4000 ppm, the highest concentration tested . In a microencapsulated feeding study in rats and mice exposed for 14 weeks at concentrations of 3125, 6250, 12500, 25000 or 50000 ppm, a maximum tolerated dose was not reached and minimal toxicity was observed (NTP report, 2002). Some decreases in body weight were noted at the two highest concentrations as well as some changes in hematology parameters, liver weights, and kidney weights. Hamster lung cell mutagen in vitro</p>
A-Gas Solvokane & TRANS-ACETYLENE DICHLORIDE	<p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>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.</p>

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 either not available or does not fill the criteria for classification  
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

A-Gas Solvokane	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
365 mfc	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
trans-acetylene dichloride	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	135mg/L	2
	EC50	48	Crustacea	220mg/L	2
<b>Legend:</b>	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				

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Substances containing unsaturated carbons are ubiquitous in indoor environments. They result from many sources (see below). Most are reactive with environmental ozone and many produce stable products which are thought to adversely affect human health.The potential for surfaces in an enclosed space to facilitate reactions should be considered.

Source of unsaturated substances                      Unsaturated substances (Reactive Emissions)                      Major Stable Products produced following reaction with ozone.

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

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
trans-acetylene dichloride	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
trans-acetylene dichloride	LOW (LogKOW = 2.09)

Mobility in soil

Ingredient	Mobility
trans-acetylene dichloride	LOW (KOC = 43.79)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<div>▸ Containers may still present a chemical hazard/ danger when empty.</div> <div>▸ Return to supplier for reuse/ recycling if possible.</div> <div>Otherwise:</div> <div>▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</div> <div>▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</div> <div>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</div> <div>A Hierarchy of Controls seems to be common - the user should investigate:</div> <div>▸ Reduction</div> <div>▸ Reuse</div> <div>▸ Recycling</div> <div>▸ Disposal (if all else fails)</div> <div>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</div> <div>▸ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></div> <div>▸ It may be necessary to collect all wash water for treatment before disposal.</div> <div>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</div> <div>▸ Where in doubt contact the responsible authority.</div> <div>▸ Recycle wherever possible or consult manufacturer for recycling options.</div> <div>▸ Consult State Land Waste Authority for disposal.</div> <div>▸ Bury or incinerate residue at an approved site.</div> <div>▸ Recycle containers if possible, or dispose of in an authorised landfill.</div>
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SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

365 mfc is found on the following regulatory lists	Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals	Australian Inventory of Industrial Chemicals (AIIC)
trans-acetylene dichloride 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) - Schedule 6	Australian Inventory of Industrial Chemicals (AIIC)

National Inventory Status

National Inventory	Status
Australia - AIIC	Yes
Australia Non-Industrial Use	No (365 mfc; trans-acetylene dichloride)

National Inventory	Status
Canada - DSL	Yes
Canada - NDSL	No (365 mfc; trans-acetylene dichloride)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (365 mfc)
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (365 mfc)
Vietnam - NCI	Yes
Russia - ARIPS	No (365 mfc)
<b>Legend:</b>	<p><i>Yes = All CAS declared ingredients are on the inventory</i></p> <p><i>No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</i></p>

## SECTION 16 Other information

<b>Revision Date</b>	01/11/2019
<b>Initial Date</b>	10/08/2007

## SDS Version Summary

Version	Issue Date	Sections Updated
3.1.1.1	09/04/2013	Physical Properties
5.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification

## Other information

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

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