SAFETY DATA SHEET
DE-ICER AEROSOL

This safety data sheet is for internal use only.

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

1.1. Product identifier

Product name	DE-ICER AEROSOL
Product No.	CDG300, CDG600, PLD600, JSB110, AOD300, AOD600, DPB600, EDI300, EDI600, FDI600, FID300, NDI311, NDI601, NDI604, PPD300, PPD600, SDI311, SDI600, SFD131, DPB300, ADI600, DIA003

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

Identified uses	Antifreeze liquid.

1.3. Details of the supplier of the safety data sheet

Supplier	TETROSYL LIMITED BEVIS GREEN WORKS WALMERSLEY BURY BL9 6RE 0161 764 5981 0161 797 5899 info@tetrosyl.com

1.4. Emergency telephone number

0161 764 5981

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (1999/45/EEC) F+;R12.

2.2. Label elements

Labelling

Extremely flammable

Risk Phrases

R12	Extremely flammable.

Safety Phrases

A1	Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
A2	Do not spray on a naked flame or any incandescent material.
S2	Keep out of the reach of children.
S9	Keep container in a well-ventilated place.
S16	Keep away from sources of ignition - No smoking.

S51	Use only in well-ventilated areas.
S56	Dispose of this material and its container to hazardous or special waste collection point.
S46	If swallowed, seek medical advice immediately and show this container or label.
S23	Do not breathe vapour/spray.

2.3. Other hazards

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

AMMONIA ...%		<0.5
CAS-No.: 1336-21-6	EC No.: 215-647-6	
Classification (EC 1272/2008)	**Classification (67/548/EEC)**	
Skin Corr. 1B - H314	C;R34	
STOT SE 3 - H335	N;R50	
Aquatic Acute 1 - H400		

BUTANE/PROPANE BLEND		1-5%
CAS-No.: 68476-85-7	EC No.: 270-704-2	
Classification (EC 1272/2008)	**Classification (67/548/EEC)**	
Flam. Liq. 1 - H224	F+;R12.	

ETHANEDIOL		5-10%
CAS-No.: 107-21-1	EC No.: 203-473-3	Registration Number: 01-2119456816-28
Classification (EC 1272/2008)	**Classification (67/548/EEC)**	
Acute Tox. 4 - H302	Xn;R22	

ETHANOL		10-30%
CAS-No.: 64-17-5	EC No.: 200-578-6	
Classification (EC 1272/2008)	**Classification (67/548/EEC)**	
Flam. Liq. 2 - H225	F;R11	

IPA		1-5%
CAS-No.: 67-63-0	EC No.: 200-661-7	Registration Number: 01-2119457558-25-XXXX
Classification (EC 1272/2008)	**Classification (67/548/EEC)**	
Flam. Liq. 2 - H225	F;R11	
Eye Irrit. 2 - H319	Xi;R36	
STOT SE 3 - H336	R67	

METHANOL		1-5%
CAS-No.: 67-56-1	EC No.: 200-659-6	

Classification (EC 1272/2008)	Classification (67/548/EEC)
Flam. Liq. 2 - H225	F;R11
Acute Tox. 3 - H301	T;R23/24/25,R39/23/24/25
Acute Tox. 3 - H311	
Acute Tox. 2 - H330	
STOT SE 1 - H370	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information
Get medical attention if any discomfort continues. Remove affected person from source of contamination. General first aid, rest, warmth and fresh air. NOTE! Effects may be delayed. Keep affected person under observation.
Inhalation
Remove victim immediately from source of exposure. In case of inhalation of spray mist: Move person into fresh air and keep at rest. Move injured person into fresh air and keep person calm under observation. If necessary, seek hospital and bring these instructions. Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure. Immediately call an ambulance.
Ingestion
Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable take to hospital along with these instructions. Provide rest, warmth and fresh air. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.
Skin contact
Wash skin thoroughly with soap and water. Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.
Eye contact
Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Do not rub eye. Get medical attention promptly if symptoms occur after washing.

4.2. Most important symptoms and effects, both acute and delayed

General information
The severity of the symptoms described will vary dependant of the concentration and the length of exposure. NOTE! Effects may be delayed. Keep affected person under observation.
Inhalation.
May cause an asthma-like shortness of breath. In case of overexposure, organic solvents may depress the central nervous system causing dizziness and intoxication, and at very high concentrations unconsciousness and death. Drowsiness, dizziness, disorientation, vertigo. Vapours may cause drowsiness and dizziness. In high concentrations, vapours are anaesthetic and may cause headache, fatigue, dizziness and central nervous system effects.
Ingestion
May cause discomfort if swallowed. May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication. Due to the physical nature of this material it is unlikely that swallowing will occur.
Skin contact
Prolonged contact may cause redness, irritation and dry skin. May cause skin irritation/eczema.
Eye contact
Extreme irritation of eyes and mucous membranes, including burning and tearing. Vapour, spray or dust may cause chronic eye irritation or eye damage. May cause blurred vision and serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

No recommendation given, but first aid may still be required in case of accidental exposure, inhalation or ingestion of this chemical. If in doubt, GET MEDICAL ATTENTION PROMPTLY!

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media
Use: Foam, carbon dioxide or dry powder. Water. Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products
In case of fire, toxic gases (CO, CO2, NOx) may be formed. During fire, toxic gases (CO, CO2, NOx) are formed.
Unusual Fire & Explosion Hazards
Extremely flammable. Severe explosion hazard when vapours are exposed to flames. Risk of explosion if heated. Vapours are heavier than air and may spread near ground to sources of ignition. May travel considerable distance to source of ignition and flash back. Heat may cause the containers to explode. Aerosol cans may explode in a fire.
Specific hazards
Aerosol containers can explode when heated, due to excessive pressure build-up. Vapours may be ignited by a spark, a hot surface or an ember. Vapours may form explosive air mixtures even at room temperature.

5.3. Advice for firefighters

Special Fire Fighting Procedures
Be aware of risk of fire re-starting, and risk of explosion. Cool containers exposed to flames with water until well after the fire is out. Use water to keep fire exposed containers cool and disperse vapours.
Protective equipment for fire-fighters
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and aerosol spray. In case of spills, beware of slippery floors and surfaces.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. The product should not be dumped in nature but collected and delivered according to agreement with the local authorities.

6.3. Methods and material for containment and cleaning up

For waste disposal, see section 13. If leakage cannot be stopped, evacuate area. Stop leak if possible without risk. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Remove sources of ignition. Collect with absorbent, non-combustible material into suitable containers.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Read and follow manufacturer's recommendations. Eliminate all sources of ignition. Wear full protective clothing for prolonged exposure and/or high concentrations. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Do not eat, drink or smoke when using the product. Avoid inhalation of vapours/spray and contact with skin and eyes. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Do not use in confined spaces without adequate ventilation and/or respirator. Mechanical ventilation or local exhaust ventilation may be required. Observe occupational exposure limits and minimise the risk of inhalation of vapours and mist.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and open flame. Keep upright. Protect against physical damage and/or friction. Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C. Do not store for long periods or in large quantities. Store in a cool and well-ventilated place. Store in a dry place. Do not store near heat sources or expose to high temperatures.

Storage Class

Flammable liquid storage.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
AMMONIA ...%	WEL		18 mg/m3		25 mg/m3	
BUTANE/PROPANE BLEND	WEL	1000 ppm	1750 mg/m3	1250 ppm	2180 mg/m3	Carc
ETHANEDIOL	WEL		10 mg/m3		104 mg/m3	Sk
ETHANOL	WEL	1000 ppm	1920 mg/m3			
IPA	WEL	400 ppm	999 mg/m3	500 ppm	1250 mg/m3	
METHANOL	WEL	200 ppm	266 mg/m3	250 ppm	333 mg/m3	Sk

WEL = Workplace Exposure Limit.
Sk = Can be absorbed through skin.
Carc = Capable of causing cancer and/or heritable genetic damage.

8.2. Exposure controls

Protective equipment

Engineering measures

Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of spray. Provide explosion proof ventilation for high concentrations.

Respiratory equipment

In case of inadequate ventilation use suitable respirator.

Hand protection

No specific hand protection noted, but gloves may still be advisable.

Eye protection
Wear approved, tight fitting safety glasses where splashing is probable.
Other Protection
Provide eyewash station. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Hygiene measures
Wash contaminated clothing before reuse. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Wash promptly with soap & water if skin becomes contaminated. DO NOT SMOKE IN WORK AREA! When using do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Aerosol.
Colour	Blue.
Odour	Ammonia.
Solubility	Soluble in water.

Initial boiling point and boiling range
Technically not feasible.

Melting point (°C)	-25°C
Relative density	0.960

Vapour density (air=1)
Not determined.
Scientifically unjustified.
Vapour pressure
Not determined.
Evaporation rate
Not determined.
Scientifically unjustified.

pH-Value, Conc. Solution	11.0
Viscosity	1 cps 20°C

Decomposition temperature (°C)
Not determined.
Scientifically unjustified.
Odour Threshold, Lower
Not determined.
Scientifically unjustified.
Odour Threshold, Upper
Not determined.
Scientifically unjustified.
Flash point
Technically not feasible.
Auto Ignition Temperature (°C)
Not determined.
Scientifically unjustified.
Flammability Limit - Lower(%)
Not determined.
Scientifically unjustified.
Flammability Limit - Upper(%)
Not determined.
Scientifically unjustified.

Partition Coefficient	Not determined.
(N-Octanol/Water)	-1.36

Scientifically unjustified.

Oxidising properties
Not determined.

9.2. Other information

None.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No specific reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Not relevant

10.4. Conditions to avoid

Avoid heat, flames and other sources of ignition. Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

Materials To Avoid
No incompatible groups noted.

10.6. Hazardous decomposition products

None under normal conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxic Dose 1 - LD 50
6000-13000 mg/kg (oral rat)
Toxic Dose 2 - LD 50
>22270 mg/kg (oral rat)

Carcinogenicity:
Does not contain any substances known to be carcinogenic.

Reproductive Toxicity:
No evidence of reproductive toxicity in animal studies

Specific target organ toxicity - single exposure:
Target Organs
Central nervous system
Central nervous system depression including narcotic effects such as drowsiness, narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.

Specific target organ toxicity - repeated exposure:
Target Organs
Skin
Morphological changes that are potentially reversible but provide clear evidence of marked organ dysfunction.

Aspiration hazard:

Not relevant, due to the form of the product.

General information
Prolonged and repeated contact with solvents over a long period may lead to permanent health problems.

Inhalation
Not relevant at normal room temperatures. When heated, irritating vapours may be formed.

Ingestion
Harmful if swallowed. May cause stomach pain or vomiting.

Skin contact
Slightly irritating.

Eye contact
Irritating to eyes.

Health Warnings
This chemical can be hazardous when inhaled and/or touched.

Route of entry
Inhalation. Skin and/or eye contact.

Target Organs
Central nervous system Eyes Skin

Medical Symptoms
Skin irritation. Irritation of eyes and mucous membranes. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo.
Medical Considerations
Skin disorders and allergies. Pre-existing eye problems.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.1. Toxicity

LC 50, 96 Hrs, Fish mg/l 18000-46000 (Ethanediol) mg/l
Acute Toxicity - Fish
Not available.
EC 50, 48 Hrs, Daphnia, mg/l 46300-51100 (Ethanediol) mg/l
Acute Toxicity - Aquatic Invertebrates
Not available.

12.2. Persistence and degradability

Degradability
The product is biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential
Will not bio-accumulate.
Partition coefficient
Not determined. -1.36
Scientifically unjustified.

12.4. Mobility in soil

Adsorption/Desorption Coefficient
Not available.

12.5. Results of PBT and vPvB assessment

Not Classified as PBT/vPvB by current EU criteria.

12.6. Other adverse effects

Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

General information
Waste is classified as hazardous waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority. Do not puncture or incinerate even when empty.

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements. Confirm disposal procedures with environmental engineer and local regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN No. (ADR/RID/ADN)	1950
UN No. (IMDG)	1950
UN No. (ICAO)	1950

14.2. UN proper shipping name

Proper Shipping Name	AEROSOLS

14.3. Transport hazard class(es)

ADR/RID/ADN Class	2.1
ADR/RID/ADN Class	Class 2: Gases
ADR Label No.	2.1
IMDG Class	2.1
ICAO Class/Division	2.1

Transport Labels

14.4. Packing group

ADR/RID/ADN Packing group	#
IMDG Packing group	#
ICAO Packing group	#

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant
No.

14.6. Special precautions for user

EMS	F-D, S-U

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION

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

EU Legislation
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Revision Comments
NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision Date	12/06/2012
Revision	13
Supersedes date	21/12/2011 v12
Safety Data Sheet Status	Approved.

Risk Phrases In Full

R34	Causes burns.
R12	Extremely flammable.
R22	Harmful if swallowed.
R11	Highly flammable
R36	Irritating to eyes.
R37	Irritating to respiratory system.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R67	Vapours may cause drowsiness and dizziness.
R50	Very toxic to aquatic organisms.

Hazard Statements In Full

H370	Causes damage to organs <<Organs>>.
H319	Causes serious eye irritation.
H314	Causes severe skin burns and eye damage.
H222	Extremely flammable aerosol.
H224	Extremely flammable liquid and vapour.
H330	Fatal if inhaled.
H302	Harmful if swallowed.
H225	Highly flammable liquid and vapour.
H336	May cause drowsiness or dizziness.
H335	May cause respiratory irritation.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H400	Very toxic to aquatic life.