

SAFETY DATA SHEET

In accordance with 2015/830 and 1272/2008

(All references to EU regulations and directives are abbreviated into only the numeric term)

Issued 2015-12-02

Replaces issued SDS 2015-11-04

FOGMAKER
INTERNATIONAL AB

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

1.1. Product identifier

Trade name

Piston accumulator

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

Identified uses

Fire extinguishing agents

1.3. Details of the supplier of the safety data sheet

Company

Fogmaker International AB

Box 8005

SE-35008 VÄXJÖ

Sweden

+46 470-77 22 00

Telephone

E-mail

info@fogmaker.com

1.4. Emergency telephone number

In case of emergency contact toxicological information, emergency tel 112.

For non-emergency poison information, see http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification in accordance with 1272/2008

Compressed gas

2.2. Label elements

Label information in accordance with 1272/2008

Hazard pictograms



Signal words

Warning

Hazard statements

H280

Contains gas under pressure; may explode if heated

Precautionary statements

2.3. Other hazards

The Piston accumulator is pressurized. This safety data sheet refers to the properties of the liquid. Pressure in container: 100 Bar.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is composed of a compressed gas mixture.

3.2. Mixtures

Note that the table shows known hazards of the ingredients in pure form. These hazards are reduced or eliminated when mixed or diluted, see Section 16d.

Constituent	Classification	Concentration
POTASSIUM FORMATE		
CAS No 590-29-4 EC No 209-677-9	-	10 - 45%
POTASSIUM ACETATE		
CAS No 127-08-2 EC No 204-822-2	-	10 - 45%
NITROGEN GAS		
CAS No 7727-37-9 EC No 231-783-9	-	20%
COCAMIDOPROPYL BETAINE		
CAS No 147170-44-3 EC No 931-333-8 Reach 01-2119552480-44	Eye Dam 1, Aquatic Chronic 3; H318, H412	< 0.4%
ETHYLENE GLYCOLE		
CAS No 107-21-1 EC No 203-473-3 Index No 603-027-00-1 Reach 01-2119456816-28	Acute Tox 4oral, STOT RE 2; H302, H373	< 0.4%
DIETHYLENE GLYCOL MONOBUTYL ETHER		
CAS No 112-34-5 EC No 203-961-6 Index No 603-096-00-8 Reach 01-2119475104-44	Eye Irrit 2; H319	< 0.4%

Explanations to the classification and labelling of the ingredients are given in Section 16e. Official abbreviations are printed in normal font. Text in italics are specifications and/or complements used in the calculation of the classification of this mixture, see Section 16b.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Generally

In case of concern, or if symptoms persist, call a doctor/physician.

Never attempt to administer liquid, or anything else, to an unconscious person via the mouth.

Upon breathing in

Allow the injured person to rest in a warm place with fresh air, if symptoms persist seek medical attention.

Upon eye contact

Remove contact lenses immediately if possible.

Flush immediately with luke-warm water for 15 - 20 minutes with wide-open eyes. If symptoms persist, seek medical advice.

Upon skin contact

Wash the skin with soap and water.

If symptoms occur, contact a physician.

Upon ingestion

Rinse nose, mouth and throat with water.

Drink plenty of water.

If symptoms persist contact a doctor.

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

Information on symptoms are ambiguous or missing for this product.

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

Not relevant.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Not applicable: the product is a fire extinguisher.

5.2. Special hazards arising from the substance or mixture

The product is not hazardous in the flammable sense.

5.3. Advice for fire-fighters

In case of fire use a respirator mask.

Protective measures should be taken regarding other material at the site of the fire.

Cool closed containers that were exposed to fire with water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use recommended safety equipment, see section 8.

Avoid contact with skin and eyes.

6.2. Environmental precautions

Avoid that larger spills reach drains, fields or waterways.

6.3. Methods and material for containment and cleaning up

Wash of thoroughly with water.

Let the gas from the leaking gas cylinders evaporate outdoors.

For waste disposal see section 13.

6.4. Reference to other sections

See section 8 and 13 for personal protection equipment and disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Do not inhale the fumes and avoid exposure to skin, eyes and clothing.

Keep well closed.

Do not eat, drink or smoke in premises where this product is stored.

Wash your hands after using the product.

Work in order to avoid spillage. If spillage does occur, address it immediately in accordance with the directions specified in Section 6 of this safety data sheet.

Store in a well-ventilated space.

Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Stored at -30°C to +65°C.

Handle in premises with good ventilation.

Eye-rinsing facilities shall be available at the workplace.

7.3. Specific end uses

Not relevant.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. National limit values, United Kingdom

ETHYLENE GLYCOLE

Time-weighted-average exposure limit (TWA) 20 ppm / 52 mg/m³ Short term exposure limit (STEL) 40 ppm / 104 mg/m³ Ann. H

DIETHYLENE GLYCOL MONOBUTYL ETHER

Time-weighted-average exposure limit (TWA) 10 ppm / 67.5 mg/m³ Short term exposure limit (STEL) 15 ppm / 101.2 mg/m³

Other ingredients (cf. Section 3) have no occupational exposure limit values.

8.2. Exposure controls

In terms of minimizing risks, attention must be paid to the physical hazards (see Sections 2 and 10) of this product according to EU directives 89/391 and 98/24 and national occupational legislation.

Eye protection should be worn if there is any danger of direct exposure or splashing.

Protective gloves are normally not needed due to the properties of this product, but may be necessary for other reasons, e.g. mechanical risks, temperature conditions or microbiological risks.

Use proper protective breathing equipment in case of insufficient ventilation.

Use protective gloves of butyl rubber, Viton or fluorine rubber, or get advice from an occupational medical expert about alternative materials. Show this safety data sheet.

For limitation of environmental exposure, see Section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

a) Appearance	Form: Compressed gas Colour: Not indicated
b) Odour	Not applicable
c) Odour threshold	Not applicable
d) pH	Not applicable
e) Melting point/freezing point	Not applicable
f) Initial boiling point and boiling range	Not applicable
g) Flash point	Not applicable
h) Evaporation rate	Not applicable
i) Flammability (solid, gas)	Not applicable
j) Upper/lower flammability or explosive limits	Not applicable
k) Vapour pressure	Not applicable
l) Vapour density	Not applicable
m) Relative density	Not applicable
n) Solubility	Solubility in water: Soluble
o) Partition coefficient: n-octanol/water	Not applicable
p) Auto-ignition temperature	Not applicable
q) Decomposition temperature	Not applicable
r) Viscosity	Not applicable
s) Explosive properties	Not applicable
t) Oxidising properties	Not applicable

9.2. Other information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

The product contains no substances which can lead to hazardous reactions at normal use.

10.2. Chemical stability

The product is stable at normal storage and handling conditions.

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

None in particular.

10.5. Incompatible materials

Avoid contact with zinc and galvanized materials.

10.6. Hazardous decomposition products

Does not decompose to hazardous substances.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

General or unspecific toxicity

The product is not classified as toxic.

Acute effects

Not classified as an acutely toxic substance.

Harmfulness

The product is not classified as harmful to health.

Repeated dose toxicity

To the best of our knowledge, no chronic effects have been reported for this product.

Carcinogenicity

To the best of our knowledge, no carcinogenic effects have been reported for this product.

CMR effects

To the best of our knowledge, no mutagenic or otherwise genetic or reproductive toxic effects have been reported for this product.

Sensibilisation

As far as we know no hypersensitivity reactions have been reported for this product.

Corrosive and irritating effects

The product is not corrosive. Minor irritation cannot be ruled out for persons who are prone/susceptible.

Synergism and antagonism

To the best of our knowledge, no synergistic effects have been reported for this product or any of its ingredients.

Effect on judgement and other psychological effects

To the best of our knowledge this product does not affect discernment if used in the manner intended.

Effect on human microflora

Effects on human micro flora have not been proven, or are negligible.

Relevant toxicological properties**POTASSIUM ACETATE**

LD50 rat (Orally) 24h = 3250 mg/kg

ETHYLENE GLYCOLE

LD50 rabbit (Dermally) 24h > 2000 mg/kg dermal

LC50 rat (Inhalation) 4h > 2.5 mg/L

LD50 rat (Orally) 24h = 4700 mg/kg oral

DIETHYLENE GLYCOL MONOBUTYL ETHER

LD50 rabbit (Dermally) 24h = 2700 mg/kg

LD50 rat (Orally) 24h = 5660 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

ETHYLENE GLYCOLE

LC50 Rainbow trout (*Oncorhynchus mykiss*) 96h > 18500 mg/L

LC50 fathead minnow (*Pimephales promelas*) 96h = 72860 mg/l

EC50 Freshwater water flea (*Daphnia magna*) 48 h > 100 mg/l

EC50 Freshwater water flea (*Daphnia magna*) 24h > 74000 mg/L

EC50 Algae (*Selenastrum capricornutum*) 96h 6500 - 7500 mg/L

DIETHYLENE GLYCOL MONOBUTYL ETHER

LC50 Bluegill (*Lepomis macrochirus*) 96h = 1300 mg/l

LC50 Fish 48h > 100 mg/l

EC50 Freshwater water flea (*Daphnia magna*) 72h > 100 mg/l

IC50 Algae 72h > 100 mg/l

The product is not to be labelled as an environmental hazard. However, it is not inconceivable that large emissions, or repeated small emissions, can have a harmful effect on the environment.

12.2. Persistence and degradability

The product degrades in the natural environment.

12.3. Bioaccumulative potential

Neither this product, nor its contents, accumulates in nature.

12.4. Mobility in soil

Information about mobility in nature is not available.

12.5. Results of PBT and vPvB assessment

No chemical safety report has been executed.

12.6. Other adverse effects

Data lacking.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste handling of the product

Observe local regulations.

Recycling of the product

Empty, rinsed packaging is sent for recycling where practicable.

Transportation of waste

Not indicated

SECTION 14: TRANSPORT INFORMATION

Where not otherwise stated the information applies to all of the UN Model Regulations, i.e. ADR (road), RID (railway), ADN (inland waterways), IMDG (sea), and ICAO (IATA) (air).

14.1. UN number

1044

14.2. UN proper shipping name

FIRE EXTINGUISHERS with compressed or liquefied gas

14.3. Transport hazard class(es)**Class**

2: Gases

Classification code (ADR/RID)

6A: Gas type 6 and asphyxiant

Subsidiary risk (IMDG)

No subsidiary risk according to IMDG

Labels**14.4. Packing group**

Packing group: Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user**Tunnel restrictions**

Tunnel category: E.

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

Not applicable

14.8 Other transport information

Stowage category A

Emergency Schedule (EmS) for FIRE (IMDG) F-C.

Emergency Schedule (EmS) for SPILLAGE (IMDG) S-V.

Transport category: 3; Maximum total quantity per transport unit: 1000 kgs or litres.

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Not applicable.

15.2. Chemical safety assessment

Assessment and chemical safety report in accordance with 1907/2006 Annex I has not yet been performed.

SECTION 16: OTHER INFORMATION**16a. Indication of where changes have been made to the previous version of the safety data sheet****Revisions of this document****Earlier versions**

2015-11-04 Revisions of this document has, where not otherwise stated, been caused by changes in the regulations

2014-09-12 The composition of this product was changed

16b. Legend to abbreviations and acronyms used in the safety data sheet**Full texts for Hazard Class and Category Code mentioned in section 3**

<i>No tox haz</i>	Not classified as toxic
<i>No phys haz</i>	Non-assigned physical hazard
<i>Not Acute Tox</i>	No acute toxicity hazard
Eye Dam 1	Irreversible Eye Effects (Category 1)

Aquatic Chronic 3	Harmful to aquatic life with long-lasting effects (Category Cron 3)
Acute Tox 4oral	Acute toxicity (Category 4 oral)
STOT RE 2	STOT RE 2; Specific target organ toxicity - repeated exposure (Category 2)
No environmental hazard	Not classified as being environmentally hazardous
Eye Irrit 2	Irritates eyes (Category 2)

Comprehensive definition of the hazards mentioned in Section 2

Press Gas P

A gas which when packaged under pressure is entirely gaseous at -50 C including all gases with a critical temperature \leq -50 C

Explanations of the abbreviations in Section 14

ADR	European Agreement concerning the International Transport of Dangerous Goods by Road
RID	Regulations concerning the International Transport of Dangerous Goods by Rail
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG	International Maritime Dangerous Goods Code
ICAO	International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada)
IATA	The International Air Transport Association
Tunnel restriction code: E;	Passage through category E tunnels is strictly forbidden.
Transport category: 3;	Maximum total quantity per transport unit: 1000 kgs or litres.

16c. Key literature references and sources for data

Sources for data

Primary data for the calculation of the hazards has preferentially been taken from the official European classification list, 1272/2008 Annex I, as updated to 2015-12-02.

Where such data was not available, alternative documentation used to establish the official classification was used, e.g. IUCLID (International Uniform Chemical Information Database). As a second alternative, information was used from reputable international chemical industries, and as a third alternative other available information was used, e.g. material safety data sheets from other suppliers or information from non-profit associations, where reliability of the source was assessed by expert opinion. If, in spite of this, reliable information could not be sourced, the hazards were assessed by expert opinions based on the known hazards of similar substances, and according to the principles in 1907/2006 and 1272/2008.

Full texts for Regulations mentioned in this Safety Data Sheet

- 2015/830 COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- 1272/2008 REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- 89/391 COUNCIL DIRECTIVE (89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work
- 98/24 COUNCIL DIRECTIVE 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)
- 1907/2006 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 Annex I

16d. Methods of evaluating information referred to in 1272/2008 Article 9 which was used for the purpose of classification

Hazard calculation for this mixture has been performed as a cumulative assessment with the aid of expert assessments in accordance with 1272/2008 Annex I, where all available information which may be significant to establishing the hazards of the mixture was assessed together, and in accordance with 1907/2006 Annex XI.

16e. List of relevant hazard statements and/or precautionary statements

Full texts for hazard statements mentioned in section 3

- H318 Causes serious eye damage
- H412 Harmful to aquatic life with long lasting effects
- H302 Harmful if swallowed
- H373 May cause organs through prolonged or repeated exposure
- H319 Causes serious eye irritation

16f. Advice on any training appropriate for workers to ensure protection of human health and the environment**Warning for misuse**

This product is not expected to cause severe harm to humans or the environment. However the manufacturer, the distributor or the supplier cannot be responsible for unusual or criminal use of the product.

Other relevant information**Editorial information**

This material safety data sheet has been prepared and checked by KemRisk®, KemRisk Sweden AB, Teknikringen 10, SE-583 30 Linköping, Sweden, www.kemrisk.se