Safety data sheet
Propylene

Adams Gas 12/11/2014

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

1.1. Product identifier
Product name
Propylene
EC No (from EINECS): 204-062-1
CAS No: 115-07-1
Index-Nr. 601-011-00-9
Chemical formula C3H6
REACH Registration number:
01-2119447103-50

1.2. Relevant identified uses of the substance or mixture and uses advised against Relevant identified uses
Industrial and professional. Perform risk assessment prior to use. Uses advised against Consumer use.

1.3. Details of the supplier of the safety data sheet
Company identification
Adams Gas, 2 Bath Road, Margate, Kent, CT9 1SL
E-Mail Address sales@adamsgas.co.uk
1.4. Emergency telephone number
Emergency phone numbers (24h): 0800 195 4445
SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification acc. to Regulation (EC) No 1272/2008/EC (CLP/GHS) Press. Gas (Liquefied gas) - Contains gas under pressure; may explode if heated.
Flam. Gas 1 - Extremely flammable gas.
Classification acc. to Directive 67/548/EEC & 1999/45/EC
F+; R12
Extremely flammable.
Risk advice to man and the environment
Liquefied gas.
Contact with liquid may cause cold burns/frost bite.

2.2. Label elements
- Labelling Pictograms

- Signal word : Danger
- Hazard Statements
H280 Contains gas under pressure; may explode if heated.
H220 Extremely flammable gas.
- **Precautionary Statements**
Precautionary Statement Prevention
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Precautionary Statement Response
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
Precautionary Statement Storage
P403 Store in a well-ventilated place.
Precautionary Statement Disposal : None.

2.3. Other hazards
Contact with liquid may cause cold burns/frost bite.

SECTION 3: Composition/information on ingredients
Substance / Mixture: Substance.

3.1. Substances
Propylene
CAS No: 115-07-1
Index-Nr.: 601-011-00-9
EC No (from EINECS): 204-062-1
REACH Registration number:
01-2119447103-50
Contains no other components or impurities which will influence the classification of the product.

3.2. Mixtures
Not applicable.

SECTION 4: First aid measures

4.1. Description of first aid measures
First Aid General Information:
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
First Aid Inhalation:
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
First Aid Skin / Eye:
For liquid spillage - flush with water for at least 15 minutes. In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance. Immediately flush eyes thoroughly with water for at least 15 minutes.
First Aid Ingestion:
Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed
In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of coordination

4.3. Indication of any immediate medical attention and special treatment needed
Recommendations to physicians: Provide oxygen.

SECTION 5: Fire fighting measures

5.1. Extinguishing media
Suitable extinguishing media
Dry powder. Carbon dioxide. Water fog. Use water spray or fog to control fire fumes.

5.2. Special hazards arising from the substance or mixture
Hazardous combustion products
Incomplete combustion may form carbon monoxide.
Carbon dioxide.

5.3. Advice for fire-fighters
Specific methods
If possible, stop flow of product. Move container away or cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary.

Spontaneous/explosive reignition may occur. Extinguish any other fire. Prevent water used in emergency cases from entering sewers and drainage systems.

Special protective equipment for fire-fighters

Normal firefighters' equipment consists of an appropriate SCBA (open-circuit positive pressure compressed air type) in combination with fire kit. Equipment and clothing to the following standards will provide a suitable level of protection for firefighters.

Guideline:

EN 469:2005: Protective clothing for firefighters. Performance requirements for protective clothing for firefighting., EN 137 Respiratory protective devices — Self-contained open-circuit compressed air breathing apparatus with full face mask — Requirements, testing, marking., EN 15090 Footwear for firefighters., EN 443 Helmets for fire fighting in buildings and other structures., EN 659 Protective gloves for firefighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Evacuate area. Eliminate ignition sources. Consider the risk of potentially explosive atmospheres. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.2. Environmental precautions

Try to stop release.

6.3. Methods and material for containment and cleaning up

Ventilate area. Keep area evacuated and free from ignition sources
until any spilled liquid has evaporated. (Ground free from frost).

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Only experienced and properly instructed persons should handle gases under pressure. The substance must be handled in accordance with good industrial hygiene and safety procedures. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Take precautionary measures against static discharges. Ensure equipment is dequately earthed. Purge air from system before introducing gas. Keep away from ignition sources (including static discharges). Do not smoke while handling product. Assess the risk of a potentially explosive atmosphere and the need for explosion-proof equipment. Consider the use of only non-sparking tools. Ensure the complete gas system has been (or is regularly) checked for leaks before use. Refer to supplier's handling instructions. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Protect containers from physical damage; do not drag, roll, slide or drop. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminates particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the container contents.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from oxidant gases and other oxidants in store. Observe all regulations and local requirements regarding storage of containers. Cylinders should be stored in the vertical position and properly secured to prevent falling over. Keep container below 50°C in a well ventilated place. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials. All electrical equipment in the storage areas should be compatible with the risk of potentially explosive atmosphere. Containers should not be stored in conditions likely to encourage corrosion.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No occupational exposure limit.

8.2. Exposure controls

Appropriate engineering controls

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Systems under pressure should be regularly checked for leakages. Keep concentrations well below occupational exposure limits. Gas detectors should be used when quantities of flammable gases/vapours may be released. Provide adequate general or local ventilation. The substance is not classified for human health hazards or for environment effects and it is not PBT or vPvB so that no exposure assessment or risk characterisation is required. For tasks where the intervention of workers is required, the substance must be handled in accordance with good industrial hygiene and safety procedures. Consider work permit system e.g. for maintenance activities. Product to be handled in a closed system.

Personal protective equipment

Eye and face protection

Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes. Wear safety glasses with side shields or goggles when transfilling or breaking transfer connections. Wear eye protection to EN 166 when using gases.

Skin protection

Hand protection
Advice: Wear working gloves and safety shoes while handling containers., Chemically resistant gloves complying with EN 374 should be worn at all times when handling chemical products if a risk assessment indicates this is necessary., Wear cold insulating gloves.
Material: Neoprene
Min. Breakthrough time: 240 - 480 min
Guideline: EN 511 Protective gloves against cold.
Material: Nitrile
Min. Breakthrough time: 240 - 480 min
Guideline: EN 511 Protective gloves against cold.
Body protection
Protect eyes, face and skin from contact with product.
Other protection
Wear flame resistant/retardant clothing. Take precautionary measures against static discharges. ISO/TR 2801:2007 Clothing for protection against heat and flame -- General recommendations for selection, care and use of protective clothing. Wear working gloves and safety shoes while handling containers. EN ISO 0345 Personal protective equipment - Safety footwear.
Respiratory protection
The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD., Keep self-contained breathing apparatus readily available for emergency use.
Guideline:
EN 136 Respiratory protective devices. Full face masks. Requirements, testing, marking
Material: Filter AX
Guideline: EN 14387: Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking
Thermal hazards
If there is a risk of contact with the liquid, all protective equipment should be suitable for extremely low temperatures.
Environmental Exposure Controls
Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information
Appearance/Colour: Colourless gas.
Odour: Sweetish. Poor warning properties at low concentrations. Stenchant often added
Odour threshold: Odour threshold is subjective and inadequate to warn for over exposure.
Melting point: -185 °C
Boiling point: -47,7 °C
Flash point: Not applicable for gases and gas mixtures.
Evaporation rate: Not applicable for gases and gas mixtures.
Flammability range: 1,8 %(V) - 11,2 %(V)
Vapour Pressure 20 °C: 10,2 bar
Relative density, gas (Air=1): 1,5
Solubility in water: 384 mg/l
Partition coefficient: n-octanol/water: 1,77 logPow
Autoignition temperature: 455 °C
Viscosity: Dynamic: 0,01 mPa.s
Explosive properties:
Explosive acc. EU legislation: Not explosive.
Explosive acc. transp. reg.: Not explosive.
Molecular weight: 42 g/mol
Critical temperature: 92,4 °C
Relative density, liquid (Water=1): 0,6

9.2. Other information

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: Stability and reactivity

10.1. Reactivity

Unreactive under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can form potentially explosive atmosphere in air. May react violently with oxidants.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

Air, Oxidiser. For material compatibility see latest version of ISO- 11114.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Incomplete combustion may form carbon monoxide.
Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute inhalation toxicity
Value: LC50
Species: Rat
Exposure time: 4 h
Value in standard unit mg/l: > 20 mg/l
Acute toxicity other routes
Ingestion is not considered a potential route of exposure.
Skin irritation
Not classified as an irritant
Eye irritation
Not classified as an irritant
Sensitization
No known effects from this product.
Repeated dose toxicity
Not known.
Assessment mutagenicity
There is no evidence of mutagenic potential.
Assessment carcinogenicity
No evidence of carcinogenic effects.
Assessment teratogenicity
No indication of teratogenic effects.

SECTION 12: Ecological information

12.1. Toxicity
No known ecological damage caused by this product.
Acute and prolonged toxicity fish
Species: Fish (Various)
Exposure time: 96 h
Value type: LC50
Value in standard unit mg/l: 51,7 mg/l
Acute toxicity aquatic invertebrates
Species: Water flea (Daphnia magna)
Exposure time: 48 h
Value type: LC50
Value in standard unit mg/l: 28,2 mg/l
Toxicity aquatic plants
Species: Aquatic plants
Exposure time: 96 h
Value type: EC50
Value in standard unit mg/l: 12,1 mg/l
Species: Aquatic plants
Exposure time: 96 h
Value type: NOEC
Value in standard unit mg/l: 4,5 mg/l
Chronic toxicity fish
Species: Various (Freshwater)
Exposure time: 30 d
Value type: NOEC
Value in standard unit mg/l: 51,7 mg/l
Chronic toxicity aquatic invertebrates
Species: Water flea (Daphnia magna)
Exposure time: 16 d
Value type: LC50
Value in standard unit mg/l: 3,1 mg/l

12.2. Persistence and degradability
Readily biodegradable
Photo degradation
Exposure time: 0,61 days

12.3. Bioaccumulative potential
Bioaccumulation: Log Pow 1,77
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

12.4. Mobility in soil
No data available.
Transport between environmental compartments
Product is volatile.

12.5. Results of PBT and vPvB assessment
Not classified as PBT or vPvB.

12.6. Other adverse effects
Not applicable.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required. Refer to the EIGA code of practice (Doc.30 “Disposal of Gases", downloadable at http://www.eiga.org) for more guidance on suitable disposal methods. Gases in pressure containers (including halons) containing dangerous substances
EWC Nr. 16 05 04*

SECTION 14: Transport information

ADR/RID

14.1. UN number
1077

14.2. UN proper shipping name
Propylene

14.3. Transport hazard class(es)
Class: 2
Classification Code: 2F
Labels: 2.1
Hazard number: 23
Tunnel restriction code: (B/D)
Emergency Action Code: 2YE

14.4. Packing group (Packing Instruction)
P200

14.5. Environmental hazards
None.

14.6. Special precautions for user
None.

IMDG

14.1. UN number
1077

14.2. UN proper shipping name
Propylene

14.3. Transport hazard class(es)
Class: 2.1
Labels: 2.1
EmS: F-D, S-U

14.4. Packing group (Packing Instruction)
P200

14.5. Environmental hazards
None.

14.6. Special precautions for user
None.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

IATA

14.1. UN number
1077

Safety data sheet
Propylene

14.2. UN proper shipping name
Propylene

14.3. Transport hazard class(es)
Class: 2.1
Labels: 2.1

14.4. Packing group (Packing Instruction)
P200

14.5. Environmental hazards
None.

14.6. Special precautions for user
None.

Other transport information
Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event ofa n accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Ensure that the valve outlet cap nut or plug (where provided) is correctly fitted. Ensure that the valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Seveso Directive 96/82/EC: Covered
Other regulations
Dangerous Substances and Explosive Atmospheres Regulations (DSEAR 2002 No. 2776)
Management of Health and Safety at Work Regulations (1999 No.3242)
The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541) Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677)
Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations (EPS, 1996 No. 192)
Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306)
Personal Protective Equipment Regulations (1992 No. 2966)
Control of Major Accident Hazards Regulations (COMAH, 1999 No. 743)
Chemical Hazards Information and Packaging for Supply (CHIP,1994 No. 3247)
Pressure Systems Safety Regulations (PER, 2000 No. 128)
This Safety Data Sheet has been produced to comply withRegulation (EU) 453/2010.

15.2. Chemical safety assessment
CSA has not been carried out.

SECTION 16: Other information
Ensure all national/local regulations are observed. Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
Advice
Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Details given in this document are believed to be correct at the time of going to press.
Further information
Note:
When using this document care should be taken, as the decimal sign and its position complies with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).
References
Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:
Agency for Toxic Substances and Diseases Registry (ATSDR) (http://www.atsdr.cdc.gov/)
European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
European Chemical Agency: Information on Registered Substances http://apps.echa.europa.eu/registered/registered-sub.aspx#search
European Industrial Gases Association (EIGA) Doc. 169/11 Classification and Labelling guide.
ISO 10156:2010 Gases and gas mixtures -- Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.
International Programme on Chemical Safety (http://www.inchem.org/)
Matheson Gas Data Book, 7th Edition.
National Institute for Standards and Technology (NIST) Standard Reference Database Number 69
The ESIS (European chemical Substances 5 Information System) platform of the former European Chemicals Bureau (ECB) ESIS (http://ecb.jrc.ec.europa.eu/esis/).
The European Chemical Industry Council (CEFIC) ERICards.
Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
United States of America's National Library of Medicine's toxicology data network TOXNET (http://toxnet.nlm.nih.gov/index.html)
Substance specific information from suppliers.
EH40 (as ammended) Workplace exposure limits.
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