

SAFETY DATA SHEET

Acrylamide

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name Acrylamide
Product number 35672700

Synonyms; trade names prop-2-enamide

CAS number 79-06-1

EU index number 616-003-00-0 **EC number** 201-173-7

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

Identified uses For research purposes only.

Uses advised againstNo specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Molekula Ltd.

Lingfield Way, Darlington, DL1 4XX, United Kingdom +44 (0) 3302000333 info@molekula.com

1.4. Emergency telephone number

+44 (0) 1380 725952

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Acute Tox. 3 - H301 Acute Tox. 4 - H312 Acute Tox. 3 - H331 Eye Irrit. 2 - H319 Skin Sens. 1

- H317 Muta. 1B - H340 Carc. 1B - H350 Repr. 2 - H361 STOT RE 1 - H372

Environmental hazards Not Classified

2.2. Label elements

EC number 201-173-7

Acrylamide

Hazard pictograms





Signal word Danger

Hazard statements H301+H331 Toxic if swallowed or if inhaled.

H312 Harmful in contact with skin.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.

H340 May cause genetic defects.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary statements P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust. P261 Avoid breathing dust.

P264 Wash contaminated skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P302+P352 IF ON SKIN: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/ attention.

P311 Call a POISON CENTER/ doctor.

P312 Call a POISON CENTRE/doctor if you feel unwell. P314 Get medical advice/ attention if you feel unwell.

P330 Rinse mouth.

P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention.

P362+P364 Take off contaminated clothing and wash it before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name Acrylamide

EU index number 616-003-00-0

CAS number 79-06-1

EC number 201-173-7

Chemical formula CH2=CHCONH2

SECTION 4: First aid measures

4.1. Description of first aid measures

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General information Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical

personnel.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for

breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention. Place unconscious person on their side in the recovery

position and ensure breathing can take place.

Ingestion Get medical attention immediately. Rinse mouth thoroughly with water. Give a few small

glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep

affected person under observation.

Skin contact It is important to remove the substance from the skin immediately. Remove contamination

with soap and water or recognised skin cleansing agent. Get medical attention.

Eye contact Rinse with water. Do not rub eye. Remove any contact lenses and open eyelids wide apart.

Get medical attention if any discomfort continues.

Protection of first aidersIt may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

General information The severity of the symptoms described will vary dependent on the concentration and the

length of exposure.

Inhalation A single exposure may cause the following adverse effects: Drowsiness, dizziness,

disorientation, vertigo. Unconsciousness. High concentrations may be fatal. Prolonged or

repeated exposure may cause the following adverse effects: May cause cancer.

Ingestion May cause sensitisation or allergic reactions in sensitive individuals. May cause stomach pain

or vomiting. May cause severe internal injury. Prolonged or repeated exposure may cause the

following adverse effects: May cause cancer.

Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. May cause

discomfort. Prolonged or repeated exposure may cause the following adverse effects: May

cause cancer.

Eye contact Irritating to eyes.

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

Notes for the doctor Treat symptomatically. Keep affected person under observation. May cause sensitisation or

allergic reactions in sensitive individuals.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-

extinguishing media suitable for the surrounding fire.

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

Specific hazards This product is toxic.

Hazardous combustion

products

Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours. Carbon dioxide (CO2). Carbon monoxide (CO). Oxides of

nitrogen.

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5.3. Advice for firefighters

Protective actions during firefighting

Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters

Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions

Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Provide adequate ventilation. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. This product is toxic. Immediate first aid is imperative. May cause cancer. May cause genetic defects. Suspected of damaging fertility. Suspected of damaging the unborn child. Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Acrylamide

Storage precautions Store away from incompatible materials (see Section 10). Store locked up. Keep only in the

original container. Keep container tightly closed, in a cool, well ventilated place. Keep

containers upright. Protect containers from damage.

Light sensitive

Handle and store under inert gas

Storage class Toxic storage.

7.3. Specific end use(s)

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

Occupational exposure limits

Long-term exposure limit (8-hour TWA): WEL 0.1 mg/m³

Carc

Sk

WEL = Workplace Exposure Limit.

Carc = Capable of causing cancer and/or heritable genetic damage.

Sk = Can be absorbed through the skin.

STEL

TWA 0.1 mg/m3 UK. EH40 WEL- Workplace exposure limit

8.2. Exposure controls

Protective equipment









Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Ensure the ventilation system is regularly maintained and tested. Good general ventilation should be adequate to control worker exposure to airborne contaminants. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures

Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

Respiratory protection

Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

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Environmental exposure

controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Crystals.

Colour White.

Odourless.

Odour threshold No information available.

pH (diluted solution): 5.2-6 500 g/l

Melting point 82-86°C/179.6-186.8°F

Initial boiling point and range 125°C/257°F @ 33 hPa

Flash point 138°C/280.4°F Closed cup.

Evaporation rate No information available.

Flammability (solid, gas) No information available.

Upper/lower flammability or

explosive limits

No information available.

Vapour pressure 2.1 hPa @ 84.50°C/184.1°F 0.04 hPa @ 40°C/104°F

Vapour density 2.45 (Air = 1.0)

Relative density 1.12 g/cm3 @ 30°C/86°F

Solubility(ies) Soluble in the following materials:

Water.

Partition coefficient log Pow: -0.9 at 20°C/68°F (Bioaccumulation is not expected)

Auto-ignition temperature No information available.

Decomposition Temperature No information available.

9.2. Other information

Molecular weight 71.08

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity See the other subsections of this section for further details.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended. Stable under the

prescribed storage conditions.

10.3. Possibility of hazardous reactions

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Possibility of hazardous

Violent reactions possible with:

reactions

Alkalis.

Oxidising agents. Reducing agents. Some metals. Peroxides. Acids.

10.4. Conditions to avoid

Conditions to avoid Avoid heat.

10.5. Incompatible materials

Materials to avoid Oxidising agents. Iron. Copper. Free radical initiators.

10.6. Hazardous decomposition products

Hazardous decomposition

products

Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours. Carbon dioxide (CO2). Carbon monoxide (CO). Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Summary Toxic if swallowed.

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

Summary Harmful in contact with skin.

ATE dermal (mg/kg) 1,100.0

Acute toxicity - inhalation

Summary Toxic if inhaled.

Acute toxicity inhalation (LC₅o

dust/mist mg/l)

1.6

ATE inhalation (dusts/mists

mg/l)

0.5

Skin corrosion/irritation

Summary Based on available data the classification criteria are not met.

Serious eye damage/irritation

Summary Causes serious eye irritation.

Respiratory sensitisation

Summary Based on available data the classification criteria are not met.

Skin sensitisation

Summary May cause an allergic skin reaction.

Germ cell mutagenicity

Summary May cause genetic defects.

Carcinogenicity

Summary May cause cancer.

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IARC carcinogenicity IARC Group 2A Probably carcinogenic to humans.

Reproductive toxicity

Summary Suspected of damaging the unborn child. Suspected of damaging fertility.

Specific target organ toxicity - single exposure

Summary Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

Summary Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

Summary Not relevant. Solid.

General information Avoid contact during pregnancy/while nursing. May damage fertility. May cause cancer after

repeated exposure. Risk of cancer depends on duration and level of exposure. May cause genetic defects. The severity of the symptoms described will vary dependent on the

concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Drowsiness, dizziness,

disorientation, vertigo. Unconsciousness. High concentrations may be fatal.

Ingestion May cause sensitisation or allergic reactions in sensitive individuals. May cause stomach pain

or vomiting. May cause severe internal injury.

Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. May cause

discomfort.

Eye contact Irritating to eyes.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target organs No specific target organs known.

Medical considerations Skin disorders and allergies.

SECTION 12: Ecological information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have

hazardous effects on the environment.

12.1. Toxicity

Acute aquatic toxicity

Summary Based on available data the classification criteria are not met.

Chronic aquatic toxicity

Summary Based on available data the classification criteria are not met.

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient log Pow: -0.9 at 20°C/68°F (Bioaccumulation is not expected)

12.4. Mobility in soil

Mobility No data available.

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12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle

products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product

residues and hence be potentially hazardous.

Disposal methodsDo not empty into drains. Dispose of surplus products and those that cannot be recycled via a

licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is

not feasible.

SECTION 14: Transport information

General For limited quantity packaging/limited load information, consult the relevant modal

documentation using the data shown in this section.

14.1. UN number

UN No. (ADR/RID) 2074

UN No. (IMDG) 2074

UN No. (ICAO) 2074

UN No. (ADN) 2074

14.2. UN proper shipping name

Proper shipping name

(ADR/RID)

ACRYLAMIDE, SOLID

Proper shipping name (IMDG) ACRYLAMIDE, SOLID

Proper shipping name (ICAO) ACRYLAMIDE, SOLID

Proper shipping name (ADN) ACRYLAMIDE, SOLID

14.3. Transport hazard class(es)

ADR/RID class 6.1

ADR/RID classification code T2

ADR/RID label 6.1

IMDG class 6.1

ICAO class/division 6.1

ADN class 6.1

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Transport labels



14.4. Packing group

ADR/RID packing group III
IMDG packing group III
ICAO packing group III
ADN packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-A, S-A

ADR transport category 2

Emergency Action Code 2X

Hazard Identification Number 60

(ADR/RID)

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78

and the IBC Code

SECTION 15: Regulatory information

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

National regulations Health and Safety at Work etc. Act 1974 (as amended).

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment

Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].

EH40/2005 Workplace exposure limits.

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) (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

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 (as

amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

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EU - EINECS/ELINCS

None of the ingredients are listed or exempt.

US-TSCA

Present.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

ADR: European Agreement concerning the International Carriage of Dangerous Goods by

Road.

ADN: European Agreement concerning the International Carriage of Dangerous Goods by

Inland Waterways.

RID: European Agreement concerning the International Carriage of Dangerous Goods by

Rail.

IATA: International Air Transport Association.

ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.

IMDG: International Maritime Dangerous Goods.

CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate.

LC₅o: Lethal Concentration to 50 % of a test population.

LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).

EC₅: 50% of maximal Effective Concentration.

PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations

and acronyms

Acute Tox. = Acute toxicity

Carc. = Carcinogenicity Eye Irrit. = Eye irritation

Muta. = Germ cell mutagenicity Repr. = Reproductive toxicity Skin Sens. = Skin sensitisation

STOT RE = Specific target organ toxicity-repeated exposure

Classification procedures according to Regulation (EC)

1272/2008

Acute Tox. 3 - H331: Acute Tox. 3 - H301: Acute Tox. 4 - H312: STOT RE 1 - H372: Eye Irrit. 2 - H319: Skin Sens. 1 - H317: Muta. 1B - H340: Carc. 1B - H350: Repr. 2 - H361: Expert

judgement.

Training advice Only trained personnel should use this material.

Revision date 07/09/2021

Revision 1

SDS number 310

Hazard statements in full H301 Toxic if swallowed.

H312 Harmful in contact with skin.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H340 May cause genetic defects.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.