

**Safety Data Sheet**  
 acc. to OSHA HCS

Page 1/10

Printing date 09/17/2016

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Version number: 4

## 1 Identification

· **Product identifier**

· **Trade name:** Acrylamide 4K - Solution (40 %)

· **Article number:** A3632

· **Application of the substance / the mixture**

Molecular biology

Biochemistry

Laboratory chemical

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

AppliChem GmbH

Ottoweg 4

D-64291 Darmstadt

Tel.: +49 (0)6151 93570

Fax.: +49 (0)6151 935711

msds@applichem.com

· **Information department:** Dept. Compliance

· **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Muta. 1B H340 May cause genetic defects.

Carc. 1B H350 May cause cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.

· **Label elements**

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS06



GHS07



GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

acrylamide prop-2-enamide

· **Hazard statements**

H301 Toxic if swallowed.

H312+H332 Harmful in contact with skin or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

(Contd. on page 2)

US

**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 1)

- 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**

- P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P201 Obtain special instructions before use.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.  
· **vPvB:** Not applicable.

**3 Composition/information on ingredients**

- **Chemical characterization: Mixtures**  
· **Description:** aqueous solution

· **Dangerous components:**

79-06-1	acrylamide prop-2-enamide	>30-≤40%
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**4 First-aid measures**

· **Description of first aid measures**

· **General information:**

Personal protection for the First Aider.  
Immediately remove any clothing soiled by the product.  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air.  
If breathing stops: mouth-to-mouth respiration or mechanical ventilation, oxygen mask if necessary.  
Immediately call a physician.

· **After skin contact:**

Wash off with plenty of water.  
Call a doctor immediately.  
Dab with polyethylene glycol 400.  
Immediately remove any clothing soiled by the product.

· **After eye contact:**

Rinse opened eye for several minutes under running water.  
Call a doctor immediately.

· **After swallowing:**

Rinse out mouth.

(Contd. on page 3)

**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 2)

*make victim drink water (maximum of 2 drinking glasses)*

*Do not induce vomiting; immediately call for medical help.*

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*

· **Indication of any immediate medical attention and special treatment needed**

*No further relevant information available.*

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:** *Use fire fighting measures that suit the environment.*

· **For safety reasons unsuitable extinguishing agents:** *Water with full jet*

· **Special hazards arising from the substance or mixture**

*Non-combustible.*

*In case of fire, the following can be released:*

*Nitrogen oxides (NOx)*

*Ambient fire may liberate hazardous vapours.*

· **Advice for firefighters**

· **Protective equipment:** *Wear self-contained respiratory protective device.*

· **Additional information**

*Contain escaping vapours with water.*

*Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.*

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

*Do not inhale steams/aerosols.*

*Avoid substance contact.*

*Ensure adequate ventilation*

· **Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*

· **Methods and material for containment and cleaning up:**

*Absorb with liquid-binding material (AppliSorb).*

*Dispose of the collected material according to regulations.*

*Ensure adequate ventilation.*

*Clean up affected area.*

· **Reference to other sections**

*See Section 7 for information on safe handling.*

*See Section 8 for information on personal protection equipment.*

*See Section 13 for disposal information.*

## 7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

*Ensure good ventilation/exhaustion at the workplace.*

*Work only in fume cabinet.*

*Open and handle receptacle with care.*

*Prevent formation of aerosols.*

· **Information about protection against explosions and fires:** *Keep respiratory protective device available.*

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** *No special requirements.*

· **Information about storage in one common storage facility:** *Not required.*

· **Further information about storage conditions:**

*Store in a cool place.*

*Storage in a collecting room is required.*

(Contd. on page 4)

**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 3)

- Storage in a well-ventilated place.
- Accessible for authorised persons only.
- Keep receptacle tightly sealed.
- **Recommended storage temperature:** 15-25 °C
- **Storage class:** 6.1 D
- **Specific end use(s)** No further relevant information available.

## **8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

### **79-06-1 acrylamide prop-2-enamide**

PEL	Long-term value: 0.3 mg/m <sup>3</sup> Skin
REL	Long-term value: 0.03 mg/m <sup>3</sup> Skin; See Pocket Guide App. A
TLV	Long-term value: 0.03* mg/m <sup>3</sup> Skin; *inhalable fraction and vapor

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Store protective clothing separately.
  - Avoid contact with the eyes and skin.
- **Breathing equipment:**
  - Respiratory protection required when vapours/aerosols are generated.
  - Combination filter A-P3
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product 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.
- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **As protection from splashes gloves made of the following materials are suitable:**
  - Recommended thickness of the material:  $\geq 0.7$  mm
  - Fluorocarbon rubber (Viton)
  - Value for the permeation: Level  $\geq 120$  min

(Contd. on page 5)

**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 4)

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Protective work clothing

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Fluid
Color:	Colorless
Odor:	Odorless

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Vapor pressure:** Not determined.

· **Density at 20 °C (68 °F):** 1.03 g/cm<sup>3</sup> (8.595 lbs/gal)

· **Solubility in / Miscibility with**

Water: Soluble.

· **Viscosity:**

Dynamic: Not determined.

Kinematic: Not determined.

· **Solvent content:**

Organic solvents: 0.0 %

Solids content: 40.0 %

· **Other information** No further relevant information available.

## 10 Stability and reactivity

· **Reactivity** No further relevant information available.

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:**

Heating

Light (Polymerization initiator).

· **Possibility of hazardous reactions**

Exothermic reactions with:

bases

sulfuric acid

nitrosing agents

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** oxidizing agent

(Contd. on page 6)

**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 5)

- **Hazardous decomposition products:**  
nitrosamines
- In the event of fire: See chapter 5

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

Components	Type	Value	Species
<b>79-06-1 acrylamide prop-2-enamide</b>			
Oral	LD50	124 mg/kg (rat)	
Dermal	LD50	1141 mg/kg (rabbit)	

- **Primary irritant effect:**
- **on the skin:**  
Irritant to skin and mucous membranes.  
Danger of skin absorption.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Other information (about experimental toxicology):**  
After swallowing:  
Irritation of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.  
  
After absorption:  
CNS disorders, ataxia (impaired locomotor coordination).  
Further hazardous properties cannot be excluded.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Toxic  
Harmful  
Irritant  
Carcinogenic.  
The product can cause inheritable damage.

- **Carcinogenic categories**

<b>· IARC (International Agency for Research on Cancer)</b>		
79-06-1	acrylamide prop-2-enamide	2A
<b>· NTP (National Toxicology Program)</b>		
79-06-1	acrylamide prop-2-enamide	R
<b>· OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
None of the ingredients is listed.		

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** Quantitative data on the ecological effect of the product are not available.
- **Persistence and degradability** The product is easily biodegradable.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Water hazard class 3 (Self-assessment): extremely hazardous for water

(Contd. on page 7)

**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 6)

*Danger to drinking water if even extremely small quantities leak into the ground.*

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:** Chemicals must be disposed of in compliance with the respective national regulations.

· **Uncleaned packagings:**

· **Recommendation:**

*Disposal must be made according to official regulations.*

*Packagings that cannot be cleansed are to be disposed of in the same manner as the product.*

### 14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA** UN3426

· **UN proper shipping name**

· **DOT, ADR** Acrylamide solution

· **IMDG, IATA** ACRYLAMIDE SOLUTION

· **Transport hazard class(es)**

· **DOT**



· **Class**

6.1 Toxic substances

· **Label**

6.1

· **ADR**



· **Class**

6.1 (T1) Toxic substances

· **Label**

6.1

· **IMDG, IATA**



· **Class**

6.1 Toxic substances

· **Label**

6.1

· **Packing group**

· **DOT, ADR, IMDG, IATA** III

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user**

Warning: Toxic substances

· **Danger code (Kemler):** 60

(Contd. on page 8)



**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 7)

· <b>EMS Number:</b>	F-A,S-A
· <b>Stowage Category</b>	A
· <b>Stowage Code</b>	SW1 Protected from sources of heat.
· <b>Handling Code</b>	H2 Keep as cool as reasonably practicable
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 3426 ACRYLAMIDE SOLUTION, 6.1, III

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## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

- **Section 355 (extremely hazardous substances):**

All ingredients are listed.

- **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

All ingredients are listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

All ingredients are listed.

- **Chemicals known to cause developmental toxicity:**

All ingredients are listed.

- **Carcinogenicity categories**

- **EPA (Environmental Protection Agency)**

79-06-1 acrylamide prop-2-enamide

L

- **TLV (Threshold Limit Value established by ACGIH)**

79-06-1 acrylamide prop-2-enamide

A3

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

All ingredients are listed.

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 9)



**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 8)

· **Hazard pictograms**



GHS06   GHS07   GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

*acrylamide prop-2-enamide*

· **Hazard statements**

H301        *Toxic if swallowed.*

H312+H332 *Harmful in contact with skin or if inhaled.*

H315        *Causes skin irritation.*

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**

P280        *Wear protective gloves/protective clothing/eye protection/face protection.*

P201        *Obtain special instructions before use.*

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

P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** *Dept. Compliance*

· **Contact:** *Mr. Th. Stöckle*

· **Date of preparation / last revision** *09/17/2016 / 3*

· **Abbreviations and acronyms:**

*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*

*ICAO: International Civil Aviation Organisation*

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

*Acute Tox. 3: Acute toxicity – Category 3*

*Acute Tox. 4: Acute toxicity – Category 4*

*Skin Irrit. 2: Skin corrosion/irritation – Category 2*

*Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*

(Contd. on page 10)

**Trade name: Acrylamide 4K - Solution (40 %)**

(Contd. of page 9)

*Skin Sens. 1: Skin sensitisation – Category 1*  
*Muta. 1B: Germ cell mutagenicity – Category 1B*  
*Carc. 1B: Carcinogenicity – Category 1B*  
*Repr. 2: Reproductive toxicity – Category 2*  
*STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1*  
**. \* Data compared to the previous version altered.**

US