

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@aplichem.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.

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- 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

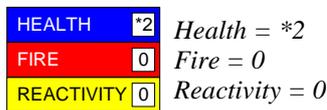
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P201 Obtain special instructions before use.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present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

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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.

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- 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 ³ Skin
REL	Long-term value: 0.03 mg/m ³ Skin; See Pocket Guide App. A
TLV	Long-term value: 0.03* mg/m ³ 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: ≥ 0.7 mm
 - Fluorocarbon rubber (Viton)
 - Value for the permeation: Level ≥ 120 min

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· **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/cm³ (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

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

· IARC (International Agency for Research on Cancer)		
79-06-1	acrylamide prop-2-enamide	2A

· NTP (National Toxicology Program)		
79-06-1	acrylamide prop-2-enamide	R

· OSHA-Ca (Occupational Safety & Health Administration)		
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

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- *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 |

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

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

79-06-1	acrylamide prop-2-enamide	A3
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· **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).

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· **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

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

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.

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