

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.10.2012

Revision: 23.09.2012

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

- **Product identifier**
- **Trade name:** Acrylamide solution 40%
- **Article number:**
20-2000-05
20-2000-10
- **Registration number** Acrylamide: 01-2119463260-48
- **Relevant identified uses of the substance or mixture and uses advised against**
Monomer for polymerisation; Intermediate; In-situ polymerisation for water shut-off; In-situ polymerisation for concrete repair; polymerisation for salt-damp remediation; In-situ polymerisation for concrete repair; Use as a laboratory agent.
- **Sector of Use**
SU0 Other
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 Manufacture of fine chemicals
SU19 Building and construction work
SU20 Health services
SU24 Scientific research and development
- **Product category**
PC19 Intermediate
PC21 Laboratory chemicals
- **Process category**
PROC0: Other
PROC1 Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent
- **Environmental release category**
ERC0 Other
ERC1 Manufacture of substances
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6c Industrial use of monomers for manufacture of thermo-plastics
- **Application of the substance / the preparation**
Reactive monomer for the production of polymers.
It is also used as a chemical intermediate.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **Emergency telephone number:** Tel: 0044 1562 825286 (not 24 hours)

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2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

- Muta. 1B H340 May cause genetic defects.
 Carc. 1B H350 May cause cancer.
 Repr. 2 H361f Suspected of damaging fertility.
 STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

- Acute Tox. 4 H302 Harmful if swallowed.
 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2 H319 Causes serious eye irritation.
 Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



T; Toxic

- R45-46-25-48/23/24/25: May cause cancer. May cause heritable genetic damage. Toxic if swallowed.
 Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.



Xn; Harmful

- R20/21-62: Harmful by inhalation and in contact with skin. Possible risk of impaired fertility.



Xi; Irritant

- R36/38: Irritating to eyes and skin.



Xi; Sensitising

- R43: May cause sensitisation by skin contact.

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms** GHS07, GHS08

- **Signal word** Danger

- **Hazard-determining components of labelling:**

acrylamide

- **Hazard statements**

H302 Harmful if swallowed.

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- 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.
- H361f Suspected of damaging fertility.
- H372 Causes damage to organs through prolonged or repeated exposure.

- **Precautionary statements**

- P101 If medical advice is needed, have product container or label at hand.
- P102 Keep out of reach of children.
- P103 Read label before use.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P270 Do not eat, drink or smoke when using this product.
- P260 Do not breathe mist/vapours/spray.
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.

- **Other hazards**

- **Results of PBT and vPvB assessment**

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

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
79-06-1 acrylamide
- **Identification number(s)**
- **EC number:** 201-173-7
- **Index number:** 616-003-00-0
- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 79-06-1 EINECS: 201-173-7	acrylamide T Carc. Cat. 2, Muta. Cat. 2 R45-46-25-48/23/24/25; Xn R20/21-62; Xi R36/38; Xi R43 Repr. Cat. 3 <hr style="border-top: 1px dashed black;"/> Acute Tox. 3, H301; Muta. 1B, H340; Carc. 1B, H350; Repr. 2, H361f; STOT RE 1, H372; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	40%
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- **SVHC**

79-06-1	acrylamide
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- **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **Description of first aid measures**
- **General information:**
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.
In case of irregular breathing or respiratory arrest provide artificial respiration.

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- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
DO NOT DELAY!
If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.
MAY BE ABSORBED through the skin!
- **After eye contact:**
DO NOT DELAY!
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
DO NOT DELAY!
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
- **Information for doctor:**
Treat symptomatically and supportively.
No specific antidote.
As ingestion may cause central and peripheral nervous system depression, do not induce vomiting because of the danger of aspiration.
- **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 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Gives off irritating or toxic fumes (or gases) in a fire.
Elevated temperatures or contamination may cause material to polymerise causing a pressure buildup that may violently rupture tanks or containers.
- **Advice for firefighters**
- **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
- **Additional information** Cool endangered receptacles with water spray.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Avoid formation of dust.
- **Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Send for recovery or disposal in suitable receptacles.

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Ensure adequate ventilation.

· **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**

Avoid direct contact (skin contact, ingestion and/or inhalation of fume/mist/dust) with the product.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Never mouth pipette acrylamide solutions.

Take note of assigned workplace exposure limits.

Do NOT take working clothes home. Launder contaminated clothing before reuse.

Safety showers and eye wash facilities should be available within easy reach of the work areas.

Laboratories should be equipped with suitable exhaust ventilation and fume cupboards.

· **Information about fire - and explosion protection:** Keep respiratory protective device available.

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

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Prevent any seepage into the ground.

Light sensitive. Store in light-resistant containers. Keep container tightly closed.

Keep container in a cool, well-ventilated area. Do not store above 23 °C (73.4°F). Preferably store in a refrigerator at 4 °C

Keep away from heat sources and direct sunlight. Storage temperatures should be ideally maintained below 4 degs. C.

Heating in an open container may cause loss of oxygen.

Packaged product should be consumed on a first in, first out basis.

· **Information about storage in one common storage facility:**

Store away from oxidizing agents.

Store away from reducing agents.

Store away from metals.

Store away from foodstuffs.

Do not store with chelating agents.

· **Further information about storage conditions:** Keep container tightly sealed.

· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

79-06-1 acrylamide

WEL	Long-term value: 0.3 mg/m ³
	Carc; Sk

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- **DNELs**

- WORKERS**

- Acute / short-term exposure - systemic effects

- Dermal DN(M)EL

- DNEL (Derived No Effect Level): 3 mg/kg bw/day

- Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 120 mg/m³

- Acute / short-term exposure - local effects

- Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 120 mg/m³

- Long-term exposure - systemic effects

- Dermal DN(M)EL

- DMEL (Derived Minimum Effect Level): 0.1 mg/kg bw/day

- Inhalation DN(M)EL

- DMEL (Derived Minimum Effect Level): 0.07 mg/m³

- **PNECs**

- PNEC aqua (freshwater): 0.032 mg/L

- PNEC aqua (marine water): 2 µg/L

- PNEC aqua (intermittent releases): 0.32 mg/L

- PNEC STP: 0.2 mg/L

- PNEC sediment (freshwater): No exposure of sediment expected

- PNEC sediment (marine water): No exposure of sediment expected

- PNEC soil: No exposure of soil expected

- PNEC oral: No potential for bioaccumulation

- **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- Select PPE appropriate for the operations taking place taking into account the product properties.

- **General protective and hygienic measures:**

- Do not eat, drink, smoke or sniff while working.

- Storing food in the working area is prohibited.

- A safe system of work must be formulated and followed to ensure that workers who may be pregnant or breastfeeding do not come into direct contact with the product.

- A safe system of work must be formulated and followed to ensure safe working with this product.

- Relevant workers must receive suitable and sufficient training and supervision.

- Take note of assigned Workplace Exposure Limits.

- Do not inhale gases / fumes / aerosols.

- Keep away from foodstuffs, beverages and feed.

- 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.

- **Respiratory protection:**

- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- **Protection of hands:**



Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
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.

For operations where skin contact with this material can occur, wear impervious gloves (e.g. PVC or nitrile).

WASH GLOVES THOROUGHLY BEFORE REMOVING AND DISCARD GLOVES THAT ARE CONTAMINATED ON THE INSIDE.

· **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.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Impervious protective clothing

For operations where skin contact with this material can occur, wear rubber or neoprene shoes or boots (leather is unsuitable unless covered) and impervious disposable coveralls that provide head, arm and foot protection from contact with this material.

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:	Fluid
Colour:	Clear
Odour:	Odourless
Odour threshold:	Not determined.

· **pH-value:** 5-8

· **Change in condition**

Melting point/Melting range:	2 °C
Boiling point/Boiling range:	125 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Product is not selfigniting.

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

· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

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· Vapour pressure at 20 °C:	23 hPa
· Density at 20 °C:	1.04 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
The substance is stable at room temperature but may polymerise violently on melting or when heated above 50 °C.
- **Thermal decomposition / conditions to be avoided:**
Elevated temperatures or contamination may cause material to polymerise causing a pressure buildup that may violently rupture tanks or containers.
- **Possibility of hazardous reactions**
Acrylamide is incompatible with reducing agents, copper, aluminium, brass and braoze. Iron or rust may trigger rapid exothermic polymerisation of solutions.

- Reacts spontaneously with hydroxyl-, amino-, and sulfhydryl- containing compounds. Reacts vigorously with acids, bases producing ammonia salts and acrylic acid.

- Spontaneous polymerisation does not readily occur, but requires the presence of dimethylaminopropionitrile (DMAPN) catalyst and ammonium persulphate. Also, acrylamide may polymerise upon contact with oxidizing materials such as peroxides.
- **Conditions to avoid** Do not overheat.
- **Incompatible materials:**
Strong acids and oxidising agents
Reducing agents.
Finely powdered metals.
- **Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Ammonia
Nitrogen oxides (NO_x)

11 Toxicological information

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

79-06-1 acrylamide		
Oral	LD50	177 mg/kg (rat)
Dermal	LD50	1141 mg/kg (rat)

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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Other information (about experimental toxicology):**
Acrylamide is readily absorbed by oral, dermal and inhalative routes..

EFFECTS OF SHORT-TERM EXPOSURE: The substance is irritating to the eyes, the skin and the respiratory tract. The substance may cause effects on the central nervous system.

Depending on the degree of exposure, periodic medical examination is suggested.

- **Subacute to chronic toxicity:**
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance may have effects on the nervous system, resulting in peripheral nerve damage. This substance is probably carcinogenic to humans. May cause heritable genetic damage in humans.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Toxic
Harmful
Irritant
Carcinogenic.
The product can cause inheritable damage.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

79-06-1 acrylamide

EC50 98 mg/kg (daphnia)

- **Persistence and degradability** Easily biodegradable
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** Product is not expected to bioaccumulate.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
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**
Contact waste processors for recycling information.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

Employees engaged in disposal of acrylamide should be thoroughly trained in effective procedures and protected from any possibility to skin or eye contact or inhalation of dusts, fumes or vapours.

Waste acrylamide monomer and containers that have held acrylamide monomer can be a hazard. Do not let such waste material into municipal waste treatment or landfill operations. Containers must be rinsed thoroughly and then can be disposed by burning in an approved industrial incinerator or buried in an approved landfill.

· **European waste catalogue**


Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

· **Uncleaned packaging:**

· **Recommendation:** Container remains hazardous when empty. Continue to observe all precautions.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

· UN-Number	
· ADR, IMDG, IATA	UN3426
· UN proper shipping name	
· ADR	3426 ACRYLAMIDE SOLUTION
· IMDG, IATA	ACRYLAMIDE SOLUTION
· Transport hazard class(es)	
· ADR, IMDG, IATA	
	
· Class	6.1 Toxic substances.
· Label	6.1
· Packing group	
· ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Toxic substances.
· Danger code (Kemler):	60
· EMS Number:	F-A,S-A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5L
· Transport category	2
· Tunnel restriction code	E

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· UN "Model Regulation": UN3426, ACRYLAMIDE SOLUTION, 6.1, III

15 Regulatory information

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

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

79-06-1	acrylamide
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· **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.

· **Relevant phrases**

H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
R20/21	Harmful by inhalation and in contact with skin.
R25	Toxic if swallowed.
R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R45	May cause cancer.
R46	May cause heritable genetic damage.
R48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R62	Possible risk of impaired fertility.

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