Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 21.12.2011 *Version number 1* *Revision: 21.12.2011*

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

· **1.1. Product identifier**

· **Trade name: Acrylamide**
· **Synonyma** 2-Propenamide

· **Article number:** 10678
· **CAS Number:**
79-06-1
· **EC number:**
201-173-7
· **Index number:**
616-003-00-0
· **Registration number** 01-2119463260-48
· **1.2. Relevant identified uses of the substance or mixture and uses advised against**
· **Sector of Use** SU24 Scientific research and development
· **Product category**
PC19 Intermediate
PC21 Laboratory chemicals
· **Process category**
PROC15 Use as laboratory reagent
PROC 0: Other: Monomer for polymerisation
· **Environmental release category** ERC 0: Other: Laboratory Use

· **1.3. Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

· **Information department:** Product Safety department Tel.: +49 6221 13840-35
· **1.4. Emergency telephone number:** +49 6131 19240 (university hospital Mainz)

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2 Hazards identification

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


GHS06

Acute Tox. 3 H301 Toxic if swallowed.


GHS08

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 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.

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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
Carc. Cat. 2, Muta. Cat. 2
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.

Repr. Cat. 3
· ***Classification system:***
The classification was made according to the latest editions of the EU-lists, and expanded upon fom company and literature data.

· ***2.2. Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008***
The substance is classified and labelled according to the CLP regulation.
· ***Hazard pictograms*** *GHS06, GHS08*
· ***Signal word*** *Danger*
· ***Hazard statements***
H301 Toxic if swallowed.
H312 Harmful in contact with skin.
H332 Harmful 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.
H361f Suspected of damaging fertility.
H372 Causes damage to organs through prolonged or repeated exposure.
· ***Precautionary statements***
P201 Obtain special instructions before use.
P281 Use personal protective equipment as required.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
· ***2.3. Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *PBT - assessment not available.*
· ***vPvB:*** *vPvB - assessment not available.*

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3 Composition/information on ingredients

· **3.1. Chemical characterization: Substances**
· **CAS No. Description:**
79-06-1 acrylamide
· **Identification number(s):**
· **EC number:** 201-173-7
· **Index number:** 616-003-00-0
· **Description:**
· **Empirical formula:** C_3H_5NO
· **MW:** 71,1

· **SVHC**	
79-06-1	acrylamide

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4 First aid measures

· **4.1. Description of first aid measures**
· **General information**
Take affected persons out of danger area and lay down.
Remove contaminated clothing.
· **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** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact**
Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing.
· **After swallowing** Drink copious amounts of water and provide fresh air. Call for doctor immediately.
· **Information for doctor**
· **4.2. Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **4.3. Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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5 Firefighting measures

· **5.1. Extinguishing media**
· **Suitable extinguishing agents**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **5.2. Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide and carbon dioxide
· **5.3. Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.

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6 Accidental release measures

· **6.1. Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Mount respiratory protective device.
· **6.2. Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **6.3. Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Pick up mechanically.

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Ensure adequate ventilation.
· ***6.4. Reference to other sections***
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

· ***Handling***
· ***7.1. Precautions for safe handling***
Work only in fume cupboard.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Ensure cleanliness at the workplace.
Restrict the quantity stored at the work place.
Residues sublimate easily. Do not inhale vapours.
· ***Information about protection against explosions and fires:*** *Keep respiratory protective device available.*

· ***7.2. Conditions for safe storage, including any incompatibilities***
· ***Storage***
· ***Requirements to be met by storerooms and receptacles:***
Store only in the original receptacle.
Store at +2 to +8 °C
· ***Information about storage in one common storage facility:***
Store away from oxidizing agents.
Store away from flammable substances.
· ***Further information about storage conditions:***
Keep receptacle tightly sealed.
Store under lock and key and with access restricted to technical experts or their assistants only.
· ***7.3. Specific end use(s)*** *No other specific uses as mentioned in section 1.2..*

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8 Exposure controls/personal protection

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

· ***8.1. Control parameters***
DMEL systemic long-term effects by inhalation: 0,07 mg/m³
DMEL systemic long-term effects , dermal: 0,1 mg/kg

· **Components with limit values that require monitoring at the workplace:**	
79-06-1 acrylamide (80-100%)	
WEL	Long-term value: 0.3 mg/m³ Carc; Sk

· ***PNECs***
PNEC fresh water for permanent discharge: 0,03 mg/l
PNEC fresh water for occasional discharge: 0,3 mg/l
PNEC sewage plant: 0,2 mg/l
· ***Additional information:*** *The lists that were valid during the creation were used as basis.*

· ***8.2. Exposure controls***
· ***Personal protective equipment***
· ***General protective and hygienic measures***
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.
Collect residual Acrylamide separately.
Disposal considerations see section 13.

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· ***Breathing equipment:***
Short term filter device:
Filter P3.
· ***Protection of hands:***
PVC gloves
Neoprene gloves
Internal tests have shown that some rubber gloves may be subject to permeability to acrylamide. We suggest using neoprene gloves.
· ***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.
· ***Penetration time of glove material***
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· ***For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:***
PVC gloves
Neoprene gloves
· ***Eye protection:*** *Safety glasses*
· ***Body protection:*** *Protective work clothing.*
· ***Limitation and supervision of exposure into the environment***
Ecological informations see section 12.
Do not exceed PNEC.

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9 Physical and chemical properties

· ***9.1. Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*Crystalline powder*
Colour:	*White*
· ***Odour:***	*Odourless*
· ***Odour threshold:***	*Not determined.*
· ***pH-value (50 g/l) at 20°C:***	*5.0 - 8.0*
· ***Change in condition***	
Melting point/Melting range:	*84 - 85°C*
Boiling point/Boiling range:	*polymerizes below boiling point.*
· ***Flash point:***	*not applicable: solid, polymerizes below boiling point.*
· ***Flammability (solid, gaseous)***	*Product is not flammable.*
· ***Danger of explosion:***	*Product does not present an explosion hazard.*
· ***Vapour pressure at 25°C:***	*0.009 hPa*
· ***Density at 20°C:***	*1.03 g/cm³*
· ***Bulk density at 20°C:***	*ca. 500 kg/m³*
· ***Solubility in / Miscibility with***	
Water at 25°C:	*2040 g/l*
· ***Segregation coefficient (n-octanol/water) at 20°C:***	*-0.9 log POW (HPLC)*
· ***9.2. Other information***	*No further relevant information available.*

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10 Stability and reactivity

· ***10.1. Reactivity*** *No further relevant informations available*

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· ***10.2. Chemical stability***
· ***Thermal decomposition / conditions to be avoided:*** *polymerizes when heated.*
· ***10.3. Possibility of hazardous reactions***
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion
Exothermic polymerisation
Reacts with oxidizing agents
· ***10.4. Conditions to avoid*** *No further relevant information available.*
· ***10.5. Incompatible materials:*** *No further relevant information available.*
· ***10.6. Hazardous decomposition products:***
Nitrogen oxides
Carbon monoxide and carbon dioxide

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11 Toxicological information

· ***11.1. Information on toxicological effects***
· ***Acute toxicity:***

· ***LD/LC50 values that are relevant for classification:***		
Oral	*LD50*	*177 mg/kg (rat)*
Dermal	*LD50*	*1141 mg/kg (rabbit)*
	LC50/96h	*180 mg/l (Fish)*

· ***Primary irritant effect:***
· ***on the skin:*** *Irritant to skin and mucous membranes.*
· ***on the eye:*** *Eye irritant because of test results according to OECD TG 405.*
· ***Sensitization:*** *Skin sentisizer because of test results according to OECD TG 404.*
· ***Other information (about experimental toxicology):***
STOT RE: long-term toxicity (OECD TG 453, two-year study, rat, oral) NOAEL: 0,5 mg/kg bw/d
STOT SE: no specific effects known.
Asp. Tox.: effects not expected/ known.
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
Carcinogenicity Category 2 because of positive effects in 2-year study (oral, rat), NOAEL: 0,5 mg/kg bw/d.
Mutagenicity Category 2 because of positive effects according to in vivo and in vitro tests.
Reproductive toxicity Category 3: Fertility: NOAEL: 2 mg/kg bw/d (rat); Teratogenicity: NOAEL: 2,5 mg/kg bw/d (rat).
Muta. 1B, Carc. 1B, Repr. 2

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12 Ecological information

· ***12.1. Toxicity***
· ***Acquatic toxicity:***
Acute toxicity to fish: LC50/96h: 180 mg/l (oncorhynchus mykiss)
Long-term toxicity to fish: NOEC: >5 mg/l (28 d)
Acute toxicity to daphnia magna: NOEC: 60 mg/l 48h (behaviour)
Toxicity to algae: IC50: 33,8 mg/l 72h (biomass)
Toxicity to aquatic microorganisms: NOEC: 2 mg/l

EC50/48h	*98 mg/l (Daphnia magna)*

· ***12.2. Persistence and degradability***
Easily biodegradable
Screening Test (closed bottle test): approximate 100% biodegradable after 28 days.
· ***Behaviour in environmental systems:***
· ***12.3. Bioaccumulative potential*** *No relevant bioaccumulation is expected because of log Pow < 1.*
· ***12.4. Mobility in soil***
No accumulation is expected in soils because of log Pow < 1 and its high water solubility.

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· ***Additional ecological information:***
· ***General notes:***
Water danger class 3 (German Regulation) (Assessment by list): 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.
· ***12.5. Results of PBT and vPvB assessment***
· ***PBT:*** *PBT - assessment not available.*
· ***vPvB:*** *vPvB - assessment not available.*
· ***12.6. Other adverse effects*** *No further relevant information available.*

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13 Disposal considerations

· ***13.1. Waste treatment methods***
· ***Recommendation***
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· ***Uncleaned packagings:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*
· ***Recommended cleansing agent:*** *Water, if necessary with cleansing agents.*

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14 Transport information

· ***14.1. UN-Number***	
· ***ADR, IMDG, IATA***	*UN2074*
· ***14.2. UN proper shipping name***	
· ***ADR***	*2074 ACRYLAMIDE, SOLID*
· ***IMDG, IATA***	*ACRYLAMIDE, SOLID*
· ***14.3. Transport hazard class(es)***	
· ***ADR***	
· ***Class***	*6.1 Toxic substances.*
· ***Label***	*6.1*
· ***IMDG, IATA***	
· ***Class***	*6.1 Toxic substances.*
· ***Label***	*6.1*
· ***14.4. Packing group***	
· ***ADR, IMDG, IATA***	*III*
· ***14.5. Environmental hazards:***	
· ***Marine pollutant:***	*No*
· ***14.6. Special precautions for user***	*Warning: Toxic substances.*
· ***Danger code (Kemler):***	*60*
· ***EMS Number:***	*F-A,S-A*
· ***14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code***	*Not applicable.*

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· ***Transport/Additional information:***

· ***ADR***
· ***Tunnel restriction code*** *E*

· ***UN "Model Regulation":*** *UN2074, ACRYLAMIDE, SOLID, 6.1, III*

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15 Regulatory information

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

· ***National regulations***

· ***Water hazard class:*** *Water danger class 3 (Assessment by list): extremely hazardous for water.*
· ***15.2. Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

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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 MSDS:*** *Product safety department*
· ***Contact:*** *+49 6221 13840-35*
· ***Abbreviations and acronyms:***
SVHC: Substance of Very High Concern (REACH)
DMEL: Derived Minimal Effect Level
NOAEL: No observed adverse effect level
NOEC: no observed effect level concentration
PBT: persistent, bioaccumulative, toxic substance (REACH)
vPvB: very persistent, very bioaccumulative substance (REACH)
IC50: inhibitory concentration, 50 percent
EC50: effective concentration, 50 percent
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Regulation on classification, labelling and packaging of substances and mixtures
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
· **** Data compared to the previous version altered.***