

Material Safety Data Sheet

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

Product Name : Acryl/Bis solution (29: 1), 40%(w/v)

Product No. : F010339

Company : Ecocell Co., Ltd
F226, 45, Jojeong-daero, Hanam-si,
Gyeonggi-do, Korea

Telephone : +82-2-457-2236

Fax : +82-2-6442-2236

Emergence Phone : +82-2-457-2236

Email : support@cellconics.com

2 Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Inhalation, H332
Skin irritation, Category 2, H315
Eye irritation, Category 2, H319
Skin sensitisation, Category 1, H317
Germ cell mutagenicity, Category 1B, H340
Carcinogenicity, Category 1B, H350
Reproductive toxicity, Category 2, H361f
Specific target organ toxicity - repeated exposure, Category 1, Oral, Testes,
Peripheral nervous system, H372

Classification (67/548/EEC or 1999/45/EC)

| | | |
|------------|----------------------------------|-------------------|
| T | Toxic | R25 - 48/23/24/25 |
| Carc.Cat.2 | Carcinogenic Category 2 | R45 |
| Mut.Cat.2 | Mutagenic Category 2 | R46 |
| Xn | Harmful | R20/21 |
| Repr.Cat.3 | Toxic to Reproduction Category 3 | R62 |
| | Sensitising | R43 |
| Xi | Irritant | R36/38 |

2.2 GHS label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H340 May cause genetic defects. H350 May cause cancer.

H302 + H332 Harmful if swallowed or if inhaled H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.

H361f Suspected of damaging fertility.

H372 Causes damage to organs (Testes, Peripheral nervous system) through prolonged or repeated exposure.

Precautionary statements

Prevention

P201 Obtain special instructions before use. P280 Wear protective gloves.

Response

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.

P314 Get medical advice/ attention if you feel unwell.

Contains: acrylamide

2.3 Other hazards

None known.

3 Composition/information on ingredients

3.1 Mixtures

Hazardous components (REGULATION (EC) No 1272/2008)

acrylamide ($\geq 25\%$ - $< 50\%$)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

| Chemical Name (Concentration) | | |
|--|---------------------|----------------|
| CAS-No. | Registration number | Classification |
| acrylamide ($\geq 25\%$ - $< 50\%$) | | |
| Substance does not meet the criteria for PBT or vPvB according to Regulation | | |

| (EC) No 1907/2006, Annex XIII. | | |
|--|-----------------------|--|
| 79-06-1 | 01-2119463260-48-XXXX | Acute toxicity, Category 3, H301 Acute toxicity, Category 4, H332 Acute toxicity, Category 4, H312 Skin irritation, Category 2, H315 Eye irritation, Category 2, H319 Skin sensitisation, Category 1, H317 Germ cell mutagenicity, Category 1B, H340 Carcinogenicity, Category 1B, H350 Reproductive toxicity, Category 2, H361f Specific target organ toxicity - repeated exposure, Category 1, H372 |
| N,N'-methylenediacrylamide ($\geq 1\%$ - $< 10\%$) | | |
| 110-26-9 | * | Acute toxicity, Category 4, H302 |

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

4 First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: immediately apply artificial respiration, if necessary oxygen. Immediately call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

After swallowing: immediately make victim drink water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Allergic reactions, ataxia (impaired locomotor coordination), CNS disorders, muscular weakness, Tremors, Causes epileptic seizures.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Mixture with combustible ingredients.

Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of:

nitrogen oxides, Hydrogen cyanide (hydrocyanic acid)

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

7 Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Observe label precautions.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons. Protected from light.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8 Exposure controls/personal protection

8.1 Control parameters

Components

| Basis | Value | Threshold limits | Remarks |
|--------------------------|-----------------------------|------------------------|-----------------------------------|
| acrylamide (79-06-1) | | | |
| ELV (IE) | Time Weighted Average(TWA): | 0.03 mg/m ³ | |
| | Skin designation: | | Can be absorbed through the skin. |
| acrylamide (79-06-1) | | | |
| Worker DMEL, longterm | Systemic effects | inhalation | 0.09 mg/m ³ |
| Worker DMEL, longterm | Systemic effects | dermal | 0.1 mg/kg Body weight |
| Worker DMEL, acute | Local effects | inhalation | 120 mg/m ³ |
| Worker DMEL, acute | Systemic effects | inhalation | 120 mg/m ³ |
| Worker DMEL, acute | Systemic effects | dermal | 3 mg/kg Body weight |

8.2 Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Personal protective equipment

Eye/face protection

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

splash contact:

Glove material: Viton (R)

Glove thickness: 0.70 mm

Break through time: > 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 890 Vitoject® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter A-(P3)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented

Control of environmental exposure

Do not empty into drains.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|-------------------|
| a) Appearance | Form: liquid |
| b) Odour | odourless |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | No data available |
| n) Water solubility | No data available |
| o) Partition coefficient: noctanol/water | No data available |
| p) Auto-ignition temperature | No data available |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | No data available |

9.2 Other safety information

No data available

10 Stability and reactivity**10.1 Reactivity**

Applicable to the dissolved substance:

highly reactive

tends to polymerise

10.2 Chemical stability

Sensitivity to light.

10.3 Possibility of hazardous reactions

Violent polymerisation may be caused by:

Peroxides, Metals, Acids, Bases, strong oxidising agents

Exothermic reaction with:

alkalines, sulphuric acid

10.4 Conditions to avoid

Heating (decomposition)

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute toxicity estimate: 470.11 mg/kg

Calculation method

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

absorption

Acute inhalation toxicity

Acute toxicity estimate: 29.92 mg/l; vapour

Calculation method

Acute toxicity estimate: 4.35 mg/l; 4 h ; dust/mist

Calculation method

Symptoms: Possible damages:, mucosal irritations

absorption

Acute dermal toxicity

Acute toxicity estimate : > 2,000 mg/kg

Calculation method

Skin corrosion/irritation

Mixture causes skin irritation

Serious eye damage/eye irritation

Mixture causes serious eye irritation

Respiratory or skin sensitisation

Mixture may cause an allergic skin reaction

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: Not available

12 Ecological toxicity

Mixture

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

12.6 Other adverse effects

Additional ecological information

Discharge into the environment must be avoided.

Components

acrylamide

Toxicity to daphnia and other aquatic invertebrates

flow-through test EC50 *Daphnia magna* (Water flea): 98 mg/l; 48 h

US-EPA

Toxicity to algae

static test IC50 *Pseudokirchneriella subcapitata* (green algae): 67.7 mg/l; 72 h

OECD Test Guideline 201

(50% solution)

Growth inhibition NOEC *Selenastrum capricornutum* (green algae): 16 mg/l

(External MSDS)

Toxicity to bacteria

EC50 *Photobacterium phosphoreum*: 13,500 mg/l

(IUCLID)

Toxicity to fish (Chronic toxicity)

NOEC *Cyprinus carpio* (Carp): 5 mg/l; 28 d

(ECHA)

Biodegradability

100 %; 28 d; aerobic

OECD Test Guideline 301D

Readily biodegradable

Partition coefficient: n-octanol/water

log Pow: -0.78

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

N,N'-methylenediacrylamide

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout): 100 mg/l; 96 h

Partition coefficient: n-octanol/water

log Pow: -0.069

13 Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Notice Directive on waste 2008/98/EC

14 Transport information

14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

| | | |
|--------------|-----------|-----------|
| ADR/RID: Not | IMDG: Not | IATA: Not |
| dangerous | dangerous | dangerous |
| goods | goods | goods |

14.3 Transport hazard class(es)

| | | |
|------------|---------|---------|
| ADR/RID: - | IMDG: - | IATA: - |
|------------|---------|---------|

14.4 Packaging group

| | | |
|------------|---------|---------|
| ADR/RID: - | IMDG: - | IATA: - |
|------------|---------|---------|

14.5 Environmental hazards

| | | |
|------------|---------|---------|
| ADR/RID: - | IMDG: - | IATA: - |
|------------|---------|---------|

15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

16 Other information

Further information: no limited for paper copy, just for internal uses.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sangon Biotech shall not be held liable for any damage resulting from handling or from contact with the above products.