

SECTION 1 – IDENTIFICATION

Product Name: Acrylamide/Bis-acrylamide Solution, 30%, (37.5:1)
Biotechnology Grade

Catalogue Number: 5230

Other means of identification: Not available

Recommended use of the chemical and restrictions on use:
For R&D use only. Not for pharmaceutical, household or other uses.

Supplier Information:

Axil Scientific Pte Ltd
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#06-01, JTC MedTech Hub
Singapore 618305

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SECTION 2 – HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity, Oral: Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Skin sensitization: Category 1

Germ cell mutagenicity: Category 1B

Carcinogenicity: Category 1B

Reproductive toxicity: Category 2

Specific target organ toxicity - repeated exposure, Oral: Category 1
(Peripheral nervous system)

GHS Hazard Pictogram(s):



Signal Word: Danger

Hazard statements:

H302: Harmful if swallowed.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.
H340: May cause genetic defects.
H350: May cause cancer.
H361: Suspected of damaging fertility or the unborn child.
H372: Causes damage to organs (Peripheral nervous system) through prolonged or repeated exposure if swallowed.

Precautionary statement:

Prevention

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe mist or vapor.
P264: Wash skin thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P308 + P313: IF exposed or concerned: Get medical advice/ attention.
P333 + P313: IF skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313: IF eye irritation persists: Get medical advice/ attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.

Disposal

P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3 – COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical Identity: Acrylamide (monomer)
Synonyms: -
Molecular Formula: C₃H₅NO
Molecular Weight: 71.08
CAS No.: 79-06-1
EC No.: 201-173-7

Chemical Identity: Bis-Acrylamide
Synonyms: Methylenediacylamide
Molecular Formula: C₇H₁₀N₂O₂
Molecular Weight: 154.17
CAS No.: 110-26-9
EC No.: 203-750-9

Component	Classification	Concentration
Acrylamide (monomer)		
CAS-No: 79-06-1 EC-No: 201-173-7	Acute Tox. 3; Acute Tox. 4; Skin Corr./Irrit. 2; Eye Dam./Irrit. 2A; Skin Sens. 1; Muta. 1B; Carc. 1B; Repr. 2; STOT RE 1; H301, H332, H312, H315, H319, H317, H340, H350, H361, H372	< 29.5 %

Bis-Acrylamide		
CAS-No: 110-26-9 EC-No: 203-750-9	Acute Tox. 3; Acute Tox. 4; Muta. 1B; Carc. 1B; Repr. 2; STOT RE 1; H301, H312, H340, H350, H361, H372	< 0.8 %

SECTION 4 – FIRST-AID MEASURES

Eye Contact

Flush eyes with water as a precaution.

Skin Contact

Immediately wash skin thoroughly with soap and copious amounts of water.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration or if breathing is difficult, give oxygen.

Ingestion

Never give anything by mouth to an unconscious person. Rinse mouth with water.

Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Indication of immediate medical attention and special treatment needed

Data not available.

SECTION 5 – FIRE-FIGHTING MEASURES

Extinguishing Media

Use water spray, CO₂, dry chemical powder.

Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NO_x).

Special Fire-fighting Procedures

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Clean up spills immediately, observing precautions in the safety data sheet and label. Dispose into a chemical waste container.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling

Work under a fume hood. Do not inhale substance Avoid generation of vapors. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Follow all SDS/ label precautions. Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities

Store in tightly closed container in a cool, dry and well-ventilated area. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

SECTION 8 – EXPOSURE CONTROLS/ PERSONAL PROTECTION

Occupational Exposure Limits

Component	CAS-No:	Value	Control Parameters	Basis
Acrylamide (monomer)	79-06-1	PEL (long term)	0.03 mg/m ³	Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice.

Eye/ Face Protection

Safety glasses with side-shields tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Where contact with the eyes is likely, use chemical goggles.

Skin/ Hand Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an

industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body protection

Impervious clothing. Type of protective equipment must be selected based on the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

a)	Appearance	Clear colourless liquid
b)	Odour	Odourless
c)	Odour Threshold	Not available
d)	pH	Not available
e)	Melting/freezing point	Not available
f)	Initial boiling point and boiling range	Not available
g)	Flash point	Not available
h)	Evaporation rate	Not available
i)	Flammability (solid, gas)	Not available
j)	Upper/lower flammability or explosive limits	Not available
k)	Vapour pressure (mm Hg)	Not available
l)	Vapour density	Not available
m)	Relative density	Not available
n)	Solubility (ies)	Not available
o)	Partition coefficient: n-octanol/water	Not available
p)	Autoignition temperature	Not available

q) **Decomposition temperature** Not available

r) **Viscosity** Not available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity

Data not available.

Chemical stability:

Stable under ambient conditions.

Possibility of hazardous reactions

Strong oxidizing agents, strong bases, strong acids, reducing agents, alkalines, metals, peroxides.

Conditions to avoid

Data not available.

Incompatible materials

Strong acids, strong bases, strong oxidizing agents.

Hazardous decomposition products

Data not available.

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity

Acute toxicity estimate Oral – 578.42 mg/kg

(Calculation method)

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

LC50 Inhalation - 4 h - 11 mg/l - dust/mist

(Calculation method)

Symptoms: Possible symptoms: mucosal irritations

Acute toxicity estimate Dermal - > 2,000 mg/kg

(Calculation method)

Skin Corrosion/Irritation

Mixture causes skin irritation.

Serious Eye Damage/Eye Irritation

Mixtures causes serious eye irritation.

Respiratory or skin sensitization

Data not available.

Germ cell mutagenicity

Possible mutagen.

Carcinogenicity

Possible carcinogen.

Reproductive toxicity

Suspected of damaging the unborn child.
Suspected of damaging fertility.

Specific target organ toxicity - single exposure

Data not available.

Specific target organ toxicity - repeated exposure

Mixture causes damage to the peripheral nervous system through prolonged or repeated exposure.

Aspiration hazard

Data not available.

Other information

RTECS: Data not available

Components**Acrylamide****Acute Toxicity**

LD50 Oral

Rat – female – 177mg/kg
(OECD Test Guideline 401)

Acute toxicity estimate inhalation – 1.6mg/l – dust/mist
(Expert judgement)

LD50 Dermal

Rabbit – male and female – 1141mg/kg
(OECD Test Guideline 402)
(Regulation (EC) No 1272/2008, Annex VI)

Skin corrosion/irritation

Causes skin irritation.
(Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation

Eyes – Rabbit
Eye irritation - 24 h
(OECD Test Guideline 405)
(Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitization

Maximization Test - Guinea pig
Result - Positive
(OECD Test Guideline 406)
(Regulation (EC) No 1272/2008, Annex VI)

Germ cell mutagenicity

May cause genetic defects.

Ames test

Test System: Salmonella typhimurium

Result: Negative

Chromosome aberration test (in vitro)

Test System: Chinese hamster lung cells

Result: Positive

In vitro mammalian cell gene mutation test

Test System: Chinese hamster ovary cells

Results: Negative

OECD Test Guideline 478

Species: Rat – male

Result: Positive

Carcinogenicity

Suspected carcinogen.

Reproductive toxicity

Suspected of damaging fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Oral -Causes damage to organs through prolonged or repeated exposure. - Peripheral nervous system

Aspiration hazard

No data available

Bis-Acrylamide

Acute Toxicity

LD50 Oral

Rat - female - 50 - 300mg/kg

(OECD Test Guideline 423)

LD50 Dermal

Rabbit - male and female - 1141mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: No skin irritation - 1 h

(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - Mammal

Result: No eye irritation - 1 h

(OECD Test Guideline 437)

Respiratory or skin sensitization

Local lymph node assay (LLNA) – Mouse

Result: negative

(OECD Test Guideline 442B)

Germ cell mutagenicity

May cause genetic defects.

Ames test

Test System: Salmonella typhimurium

Result: Positive

OECD Test Guideline 478

Species: Rat - male

Result: Positive

Carcinogenicity

Suspected carcinogen.

Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging unborn child.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Oral -Causes damage to organs through prolonged or repeated exposure. - Peripheral nervous system

Aspiration hazard

No data available

SECTION 12 – ECOLOGICAL INFORMATION**Toxicity**

Data not available

Persistence and degradability

Data not available

Bioaccumulative potential

Data not available.

Mobility in soil

Data not available.

Other adverse effect

Data not available

Components**Acrylamide**

Toxicity to fish

Static test LC50 – Oncorhynchus mykiss (rainbow trout) – 180mg/l – 96h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

Flow-through test EC50 – Daphnia magna (water flea) – 98mg/ – 48h
(US-EPA)

Toxicity to algae

Static test NOEC - Pseudokirchneriella subcapitata - 56mg/l - 72 h
(OECD Test Guideline 201)

Toxicity to bacteria
EC50 - Photobacterium phosphoreum - 13500mg/l
(IUCLID)

Toxicity to fish (Chronic toxicity)
NOEC - Cyprinus carpio (Carp) - 5mg/l - 28 d
(ECHA)

Bis-acrylamide

Toxicity to fish
LC50 - Danio rerio (zebra fish) - > 100mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to algae
Static test NOEC - Raphidocelis subcapitata (freshwater green alga) - 100mg/l - 72 h
(OECD Test Guideline 201)

SECTION 13 – DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose off as unused product. Do not reuse empty containers.

SECTION 14 – TRANSPORT INFORMATION

UN Number

ADR/RID: 3426

IMDG: UN3426

IATA-DGR: UN3426

UN Proper Shipping Name:

ADR/RID: ACRYLAMIDE SOLUTION

IMDG: ACRYLAMIDE SOLUTION

IATA-DGR: Acrylamide solution

Transport Hazard Class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA-DGR: 6.1

Packing Group

ADR/RID: III

IMDG: III

IATA-DGR: III

Environmental Hazards

ADR/RID: no

IMDG: marine pollutant: no

IATA-DGR: no

Special Precaution for Users

Data not available

SECTION 15 – REGULATORY INFORMATION

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

Data not available

SECTION 16 – OTHER INFORMATION

Date of Issue: MAY, 30 2024

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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. Axil Scientific Pte Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.