

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : **BRILMIDE™**
Chemical Name: Acrylamide (50% solution)

COMPANY IDENTIFICATION

Black Rose Industries Ltd.
Plot No. 675
GIDC Jhagadia Industrial Estate
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India
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2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION OF THE SUBSTANCE:

PHYSICAL HAZARDS

Explosive	: Not applicable
Flammable gases	: Not applicable
Flammable aerosols	: Not applicable
Oxidizing gases	: Not applicable
Gases under pressure	: Not applicable
Flammable liquids	: Not classified
Flammable solids	: Not applicable
Self-reactive substances and mixtures	: Not classified
Pyrophoric liquids	: Not classified
Pyrophoric solids	: Not applicable
Self-heating substances and mixtures	: Classification not possible
Substances/mixtures, which in contact with water, emit flammable gases	: Not applicable
Oxidizing liquids	: Not applicable
Oxidizing solids	: Not applicable
Organic peroxides	: Not applicable
Corrosive to metals	: Classification not possible

HEALTH HAZARDS

Acute toxicity: oral	: Category 3
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Acute toxicity: skin	: Category 3
Acute toxicity: inhalation (gas)	: Not applicable
Acute toxicity: inhalation (vapor)	: Classification not possible
Acute toxicity: inhalation (dust)	: Not applicable
Acute toxicity: inhalation (mist)	: Classification not possible
Skin corrosion/irritation	: Category 3
Serious eye damage/eye irritation	: Category 2A
Respiratory sensitization	: Classification not possible
Skin sensitization	: Category 1
Germ cell mutagenicity	: Category 1B
Carcinogenicity	: Category 1B
Toxic to reproduction	: Category 1B
Specific target organ toxicity (single exposure):	Category 1 (CNS, testis)
Specific target organ toxicity (repeated expos.):	Category 1 (CNS, testis)
Aspiration hazard	: Classification not possible

ENVIRONMENTAL HAZARDS

Hazardous to the aquatic environment (acute)	: Category 3
Hazardous to the aquatic environment (chronic)	: Not classified

GHS LABEL ELEMENTS :

PICTOGRAMS :



SIGNAL WORD: DANGER

HAZARD STATEMENTS :

- Toxic if swallowed.
- Toxic in contact with skin.
- Causes mild skin irritation.
- Causes serious eye irritation.
- May cause allergic skin reaction.
- May cause genetic defects.
- May cause cancer.
- May damage fertility or the unborn child.
- Causes damage to nervous system and testis.
- Causes damage to nervous system and testis through prolonged or repeated exposure.
- Harmful to aquatic life.

PRECAUTIONARY STATEMENTS:

Prevention:

Obtain special instructions before use, and DO NOT handle until all safety precautions have been read and understood.

Wash hands, face, and other necessary parts thoroughly after handling.

Use personal protective equipment-protective helmet/eye protection/face protection/protective gloves/protective clothing/protective boots as required.

Avoid release to the environment.

Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get immediate medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash skin with soap and water/shower. If skin irritation or rash occurs: Get medical advice/attention.

IF exposed or concerned, or if you feel unwell: Get medical advice/attention.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local /regional/national /international regulations

Do not reuse the container for any other purpose. Dispose of in accordance with applicable laws and regulations.

OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION :

Emits irritating and toxic fumes under fire conditions.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>%</u>	<u>CAS No.</u>
Acrylamide	50	79-06-1
Water	50	7732-18-5

SYNONYMS: Acrylamide: 2-Propenamide

4. FIRST AID MEASURES

EYE CONTACT:

Immediately flush eyes with plenty of water for several minutes and get medical attention.

Part eyelids with fingers to assure complete flushing. Check for and remove contact lenses if easily possible.

SKIN CONTACT:

Immediately remove contaminated clothing and shoes. Flush skin IMMEDIATELY and thoroughly. If not removed promptly, this material may cause serious skin damage. Get medical attention immediately.

INGESTION:

Rinse mouth with water. Induce vomiting as directed by medical personnel. Get medical attention immediately. Never give anything by mouth to an unconscious or convulsing person. Keep the affected person warm and at rest.

MOST IMPROTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED :

This product is irritating to eye, respiratory system and skin. Inflammation of mucous membrane of eyes, nose, and throat and skin are observed. Weakness, equilibrium disturbance, tremor, confusion, hypersensitivity, difficulty in speech and other symptoms may occur after ingestion or absorbed through the skin.

SPECIAL PROTECTIVE ACTIONS FOR FIRST-AIDERS:

Wear appropriate personal protective equipment such as goggles, protective gloves, etc.

NOTE TO PHYSICIAN:

Treat symptomatically.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water jet, Water fog.

UNSUITABLE EXTINGUISHING MEDIA: Not specified.

SPECIAL HAZARDS:

Emits toxic fumes under fire conditions.

FIRE FIGHTING INSTRUCTIONS

Keep unnecessary and unprotected personnel away. Shut off supply if possible. Remove containers to safe place if possible. Keep surrounding areas cool by spraying water. Fight fire from an upwind position.

FIRE FIGHTING EQUIPMENT:

Respiratory and eye protection required for fire-fighting personnel. Full protective equipment and self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires.

HAZARDOUS COMBUSTION PRODUCTS:

Carbon oxides, nitrogen oxides.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

Warn personnel of health hazard. Keep unnecessary and unprotected personnel away. Wear appropriate personal protective equipment as specified in Section 8.

ENVIRONMENTAL PRECAUTIONS:

Warn the neighborhood as necessary.

Do not let this chemical enter the environment. Do not flush into sewer, river or any body of water.

CONTAINMENT/CLEAN-UP METHODS:

Absorb or cover with dry earth, sand or other non-combustible material and transfer to sealable containers. Large spills: Dike far ahead of liquid spill for later disposal. Stop leak if possible without personal risk. Avoid runoff to sewers or waterways.

7. HANDLING AND STORAGE

HANDLING

Technical Measures:

Avoid contact with eyes, skin, and clothing. Avoid ingestion. Wear appropriate personal protective equipment. Provide hand and eye wash station near work area. Wash thoroughly after handling.

Safe Handling Advice:

Do not handle until all safety precautions have been read and understood. Prevent leak and spill. Do not fall, drop, shock or drag the container. Avoid contact with eye, skin or clothing. Avoid ingestion.

STORAGE

Storage Conditions:

Protect from direct sunlight. Store in dark, cool (≤ 30 °C), and well-ventilated area. Keep container tightly closed. Keep away from strong oxidizers. Keep locked up. Store in a segregated and approved area.

Packaging Material:

Use UN approved containers or containers approved by local and national authorities.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS :

OSHA-PEL : 0.3 mg/m³(TWA) Skin

ENGINEERING CONTROLS:

Provide general ventilation. Use closed system or local exhaust ventilation. Provide safety shower and eye wash station near work area.

PERSONAL PROTECTIVE EQUIPMENT

Hand protection	: Protective gloves.
Eye protection	: Safety glasses, goggles, face shield.
Skin and body protection	: Safety helmet, protective clothing, safety boots, apron.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	: Liquid.
APPEARANCE	: Colorless clear liquid.
ODOR	: Odorless
pH	: Not available.
BOILING POINT	: Not available.
MELTING POINT	: Not available.
FLASH POINT	: Nonflammable. ⁴⁾
AUTOIGNITION TEMPERATURE:	Nonflammable. ⁴⁾
FLAMMABLE LIMITS	: Nonflammable. ⁴⁾
VAPOR PRESSURE	: Not available.
VAPOR DENSITY	: Not available.
SPECIFIC GRAVITY	: Not available.
SOLUBILITY	: Miscible in water ⁴⁾
Log Pow	: Not available.

The following information is for the components of this product.

< Acrylamide >

PHYSICAL STATE	: Solid.
APPEARANCE	: White crystal.
ODOR	: Odorless.
pH	: Not available.

BOILING POINT : 125 °C (at 3 kPa)¹⁾
MELTING POINT : 84.5 °C ²⁾
FLASH POINT : 138 °C (closed cup)³⁾
AUTOIGNITION TEMPERATURE:
424 °C ²⁾
FLAMMABLE LIMITS : Not available.
VAPOR PRESSURE : 1 Pa (at 20 °C) ³⁾
VAPOR DENSITY : 2.45 (air = 1) ³⁾
DENSITY : 1.13 g/cm³ ³⁾
SOLUBILITY : 204 g/100 ml in water.(at 25 °C) ³⁾
Log Pow : -1.65 - -0.67 ³⁾

10. STABILITY AND REACTIVITY

STABILITY : Stable for normal storage and handling.
HAZARDOUS REACTIONS : Reacts violently with strong oxidizers.¹⁾
MATERIALS TO AVOID : Strong oxidizers, etc. ¹⁾
CONDITIONS TO AVOID : Heat, air, sunlight
HAZARDOUS DECOMPOSITION PRODUCTS:
:Carbon oxides, nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY :

Oral rat LD₅₀ 258 mg/kg [Category 3]

Skin rat LD₅₀ 780 mg/kg [Category 3]

Inhalation Not available.

[Classification not possible]

SKIN CORROSION/IRRITATION:

Causes skin irritation. [Category 3]

SERIOUS EYE DAMAGE/EYE IRRITATION:

Causes serious eye irritation. [Category 2A]

RESPIRATORY SENSITIZATION:

Not available. [Classification not possible]

SKIN SENSITIZATION:

May cause allergic skin reaction. [Category 1]

GERM CELL MUTAGENICITY:

May cause genetic defects. [Category 1B]

CARCINOGENICITY :

May cause cancer. [Category 1B]

REPRODUCTIVE TOXICITY :

May damage fertility or the unborn child. [Category 1B]

SPECIFIC TARGET ORGAN TOXICITY:

Single Exposure :[Category 1] (nervous system, testis)

Repeated Exposure:[Category 1](nervous system, testis)

ASPIRATION HAZARD:

Not available. [Classification not possible]

The following information is for the components of this product.

< Acrylamide >

ACUTE TOXICITY :

Oral rat LD₅₀ 129 mg/kg ²⁾

Skin rat LD₅₀ 400 mg/kg ²⁾

Inhalation Not available.

SKIN CORROSION/IRRITATION:

Skin irritation human, rabbit Mild

SERIOUS EYE DAMAGE/EYE IRRITATION:

Eye irritation was observed but disappeared during the observation period of 21 days. ²⁾

RESPIRATORY SENSITIZATION: Not available.

SKIN SENSITIZATION: Guinea pig Positive

GERM CELL MUTAGENICITY:

In vivo: Germ cell heritable mutagenicity tests
(dominant lethal tests, specific locus tests) Positive

CARCINOGENICITY:

IARC: Group 2A

NTP : Reasonably anticipated carcinogen.

ACGIH: A3

REPRODUCTIVE TOXICIT:

In rat 70-day oral study: decreased number of foetuses per brood, decline in the ability of males to impregnate females, increased incidence of preimplantation embryo death, etc.²⁾

SPECIFIC TARGET ORGAN TOXICITY:

- Single Exposure : Human evidence: "hallucination, hypotension, epileptic convulsion and peripheral neuropathy, of which peripheral neuropathy being observed also after two months"
Animal studies: "tremor, hyperreflexia, repetitive tonic-clonic convulsion, asynergia of the hind limb, asynergia of posture and movement, dysfunction of hind limb muscles, vacuolation of sperm cell nuclei" ²⁾
- Repeated Exposure : Human evidence: "disturbance in gait, dysmnesia, hallucination, speech disorder, numbness of the limbs, abnormal sweating of hands and feet, taste disorder", "muscular weakness, asynergia of arms, tremor of hands, sensory disorder (vibration, pain, tactile and position sensations), decreased tendon and plantar reflexes, nystagmus, diffuse fibrosing of nerve fibers and swelling of axons associated with disappearance and demyelination " "loss of balance, decreased vision, weakness of hind limbs, tremor of forelimbs, axon degeneration in peripheral nerves and optic tract fibers, spinal cord damage, testicular atrophy, decreased numbers of sperm cells and spermatocytes, decreased sperm count" ²⁾

ASPIRATION HAZARD : Not available.

12. ECOLOGICAL INFORMATION

HAZARDOUS TO THE AQUATIC ENVIRONMENT(ACUTE):

Harmful to aquatic life. [Category 3]

HAZARDOUS TO THE AQUATIC ENVIRONMENT (CHRONIC):

[Not classified]

Ecological information of some components is known as follows:

< Acrylamide >

ECOTOXICITY :

Alga EC₅₀ 16.9 mg/l/72 hr

PERSISTENCE/DEGRADABILITY:

Biodegradable. (BOD = 70 %).

BIOACCUMULATION POTENTIAL:

Low (Estimated from Log Kow = -0.67)¹⁾

13. DISPOSAL CONSIDERATIONS

WASTE FROM RESIDUES:

Whatever cannot be saved for recovery may be burned in an approved incinerator or disposed in approved waste facility. Ensure compliance with local, state, federal and national regulations.

CONTAMINATED PACKAGING :

Empty the container completely before disposal.

14. TRANSPORT INFORMATION

Hazard class : 6.1
UN number : UN3426
Packing group : III
Proper shipping name : ACRYLAMIDE SOLUTION

15. REGULATORY INFORMATION

INVENTORY STATUS

X: All components of this product comply with the inventory requirement administered by the governing country(s).

United States : TSCA Inventory [X]
European Union : EINECS [X]
Australia : AICS [X]
Canada : DSL [X]
China : IECSC [X]
Korea : KECI [X]
New Zealand : NZIoC [X]
Philippine : PICCS [X]

16. OTHER INFORMATION

References:

- 1) Handbook of Dangerous Goods (Gunter Hommel, 1991)
- 2) GHS Classifications of Regulated Chemicals (National Institute of Technology and Evaluation, Japan, 2007)
http://www.safe.nite.go.jp/english/ghs_index.html
- 3) International Chemical Safety Cards (ICSC)

4) In-house data

To the best of our knowledge, the information contained herein is accurate.

However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.