

SAFETY DATA SHEET

K-BIO BMc

Section 1. Identification

GHS product identifier: K-BIO BMc
Other means of Identification: Not available.
Product type: Liquid
Material uses: Preservative.
Supplier/Manufacturer: No.9 Huanghai Rd, Bohai Chemical Park, Yangkou Town, Shouguang, Shandong, China
In Case of Emergency: +86-15578804414

Section 2. Hazards identification

Classification of the substance or mixture: ACUTE TOXICITY (dermal) - Category 5
SKIN CORROSION/IRRITATION - Category 1B
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SKIN SENSITIZATION - Category 1
ACUTE AQUATIC HAZARD - Category 2
LONG-TERM AQUATIC HAZARD - Category 2

GHS Label Elements

Hazard pictograms:



Signal word:

Danger

Hazard statements:

H313 - May be harmful in contact with skin.
H318 - Causes serious eye damage.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H401 - Toxic to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention:

Wear protective gloves and eye/face protection. Avoid release to the environment. Avoid breathing vapour. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response:

IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Section 2. Hazards identification

Storage:

Not applicable.

Disposal:

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Physical and chemical Hazards:

No known significant effects or critical hazards.

Health hazards:

May be harmful in contact with skin. Causes serious eye damage. Causes skin irritation. May cause an allergic skin reaction.

Environmental hazards:

Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Other hazards which do not result in classification:

None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Other means of Identification: Not available.
Product definition: Aqueous solution

Ingredient name	%	CAS number
1,2-benzisothiazolin-3-one	≤5	2634-33-5
2-methyl-3(2H)-Isothiazolone	≤5	2682-20-4
5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	≤1	55965-84-9

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact:** Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. In case of contact with eyes, flush eyes with plenty of water for at least 30 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation:** Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin Contact:** Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion:** Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects:

- Eye contact:** Causes serious eye damage
- Skin contact:** May be harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
- Ingestion:** May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact:** Adverse symptoms may include the following:
Pain
Watering
Redness
- Inhalation:** No specific data.
- Skin contact:** Adverse symptoms may include the following:
Pain or irritation
Redness
Blistering may occur
- Ingestion:** Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician:	No specific treatment.
Specific treatment:	No specific treatment.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media:	In case of fire, use water spray (fog), foam, dry chemical or CO ₂ .
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. Water runoff from firefighting may be corrosive.
Hazardous thermal decomposition products:	Decomposition products may include the following materials: Carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides.
Special protective actions for fire-fighters:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective Equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.
Environmental precautions:	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Harmful to aquatic life with long lasting effects. Collect spillage.
Methods and materials for containment and cleaning up:	
Small spill:	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill:	Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Contaminated absorbent material may pose the same hazard as the spilt product.

Section 7. Handling and storage

Precautions for safe handling

Protective measures:	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazard
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Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 0 to 40°C (32 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Occupational exposure limits

None

Recommended monitoring Procedures:

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate Engineering Controls:

If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Personal Protection

Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye Protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: Tightly fitting safety goggles.

Respiratory protection:

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other Skin protection:

Recommended: Full mask with type ABEK filter if product forms vapor/aerosol. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Body protection:

Recommended: Wear protective clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear protective clothing.

Section 9. Physical and chemical properties

Physical state:	Liquid
Appearance:	Light green
Odor:	Noticeable
Odor threshold:	Not Available
pH:	3 to 6
Boiling Point:	>100°C (212°F)
Melting point:	Not available
Flash point:	>100°C (>212°F)
Evaporation Rate:	Not available
Explosion limits:	Not available
Vapor pressure:	<20 hPa (20°C)
Density	1 g/cm ³
Solubility in Water:	Complete Miscible in water.
Partition coefficient: n- octanol/water:	Not available
Vapor density:	Not available
Viscosity:	Kinematic: 124 mm ² /s
Auto-ignition temperature:	Not available

Section 10. Stability and reactivity

Reactivity:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	No specific data
Incompatible materials:	No specific data
Hazardous decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects:

Product/Ingredient name	Result	Species	Dose	Exposure	Test
K-BIO BMc	LD50 Oral	Rat	>2000 mg/kg	-	*
K-BIO BMc	LD50 Dermal	Rat	>2000 mg/kg	-	*

Irritation/Corrosion

Skin:	1,2-Benzisothiazol-3(2H)-one: slightly irritant, Rabbit 3(2H)-Isothiazolone, 2-methyl-:corrosive
Eyes:	1,2-Benzisothiazol-3(2H)-one: Risk of serious damage to eyes. 3(2H)-Isothiazolone, 2-methyl-:Risk of serious damage to eyes.

Sensitization:

Product/Ingredient Name	Route of exposure	Species	Result
K-BIO BMc	Skin	Guinea pig	Sensitizing

Skin: Not available

Mutagenicity: Not available

Product/Ingredient Name	Test	Experiment	Result
3(2H)-Isothiazolone, 2-methyl	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Subject: Bacteria Experiment: In vitro	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Subject: Mammalian-Animal Experiment: In vitro	Negative
	OECD 484 Genetic Toxicology: Mouse Spot Test	Subject: Mammalian-Animal Experiment: In vivo	Negative

Reproductive toxicity: Not available

Carcinogenicity: Not available

Teratogenicity: Not available

Specific target organ toxicity (single exposure) Not available

Specific target organ toxicity repeated exposure): Not available

Aspiration hazard: Not available

Information on likely routes of exposure: Not available

Potential acute health effects:

Eye Contact:	Causes serious eye damage
Inhalation:	May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system.
Skin Contact:	May be harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Ingestion:	May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye Contact:	Adverse symptoms may include the following: Pain Watering Redness.
Inhalation:	No specific data
Skin contact:	Adverse symptoms may include the following: Pain or irritation Redness Blistering may occur
Ingestion:	Adverse symptoms may include the following: Stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects: Not available

Potential delayed effects: Not available

Long term exposure

Potential immediate effects: Not available

Potential delayed effects: Not available

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
1,2-Benzisothiazol-3(2H)-one	Sub-chronic NOAEL Oral	Rat	25 mg/kg/d	90 days
3(2H)-Isothiazolone,2-methyl	Sub-chronic NOAEL Oral	Rat	19 mg/kg/d	-

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE Value (Acute Toxicity Estimates)
Not available	

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Result	Species	Exposure
1,2-Benzisothiazol-3(2H)-one	-	Acute EC50 3,7 ml/l	Daphnia – Daphnia magna	48 hours
	-	Acute IC50 0,8	Algae	72 hours
3(2H)-Isothiazolone, 2-methyl		EC50 31,7 mg/l	Bacteria – Activated sludge	3 hours
		Acute EC50 0,87 mg/l	Daphnia – Daphnia magna	48 hours
		Acute IC50 0, 157 mg/l	Algae – Pseudokirchneriella subcaptitata	72 hours
		Acute LC50 >150 mg/l - Chronic NOEC 0, 0104 mg/l	Fish – Danio rerio Algae Pseudokirchneriella subcaptitata	96 hours 96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
1,2-benzisothiazolin-3-one	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	100 % - Readily - 28 days	-	-
Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability	
1,2-benzisothiazolin-3-one	-	-	Ready	
3(2H)-Isothiazolone, 2-methyl	-	-	Not readily	

Bio-accumulative Potential

Product/ingredient name	LogPow	BCF	Potential
1,2-benzisothiazolin-3-one	1,3	-	Low
3(2H)-Isothiazolone, 2-methyl	-0.32	-	Low

Mobility in soil

Soil/water partition coefficient (K_{oc}):	Not available
Other adverse effects:	No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	China	IMDG	IATA
UN Number	-	-	-
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards	No	No	No
Special precautions for user	Not regulated	Not regulated	Not regulated

Transport in bulk

according to Annex II of

Marpol and the IBC Code:

Not available

Hazard Notes:

Not dangerous cargo.

Risk of serious damage to eyes. Keep separated from foodstuffs

Transportation Notes:

- Appropriate & sufficient fire-fighting facilities and spill emergency handling apparatus should be equipped with the transport vehicles.
In case of products with explosive, flammable, self-reactive, pyrophoric, self-heating and oxidizing properties:
Tank cars used in transport should be equipped with a grounding chain; a porous separator plate may be provided in the tank car to reduce static electricity shocks.
- The exhaust pipes of vehicles used for shipping this product must be equipped with fire retardant devices. The use of mechanical equipment or tools prone to sparking is prohibited.
- Protect against exposure to sun, rain and high temperatures during transit; in summer, transport should ideally be in the morning or evening.
- Keep away from fire, heat and high temperature zones during stopovers.
- When transporting over public roads, select routes compliant with regulations and do not stop over in residential or densely populated areas.

Section 15. Regulatory information

Inventory of Hazardous Chemicals

None of the components are listed:

Following regulations were referred:

1. Regulations of the Safety Administration of Dangerous Chemicals
2. Rules for classification and labeling of chemicals (30000.2~29)
3. Lists of dangerous goods (GB12268)
4. Safety Data Sheet for Chemical Products -Content and Order of Sections (GB/T16483-2008)
5. Classification and Code of Dangerous Goods (GB6944)
6. List of hazardous waste (2008.08.01)
7. GA57-92 Levels, classification and code of hypertoxic substance
8. Occupational exposure limits for hazardous agents in the workplace Part 1: Chemical hazardous agents GBZ 2.1-2007)

Section 16. Other information

Notice to reader

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