

CNBr-activated Bestarose 4B

Chemical Safety Data Sheet(MSDS)

1. Chemical Safety Data Sheet(MSDS)

Chemical name	CNBr-activated Bestarose 4B
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Company	Bestchrom (Shanghai) Biosciences Ltd.

2. Hazards identification

Classification of dangerous goods Flammable Liquid

Pictogram



Signal word Warning

Hazard statement(s) Acute poisoning is mainly manifested as anesthesia on the central nervous system, fatigue, nausea, headache, dizziness, and irritability. In severe cases, vomiting, shortness of breath, spasms, and even coma occur. It is irritating to the eyes, nose and throat. After oral administration, there is a burning sensation in the lips and throat, followed by dry mouth, vomiting, coma, acidosis and ketosis. Chronic effects: long-term exposure to the product causes dizziness, burning sensation, pharyngitis, bronchitis, fatigue, irritability, etc. Long-term repeated skin contact can cause dermatitis.

Enter source Inhale, eat, absorb by skin

Environmental hazards Hazardous to environment

Explosive danger This product is highly flammable and stimulating

3. Composition/Information on Ingredients

Chemical composition	Percentage (%)	CAS No.	EC No.
Slurry CNBr-activated Bestarose 4B	80	9002-18-0	232-658-1
Liquid acetone	18-24	67-64-1	200-662-2

4. First-aid Measures

Skin contact Immediately remove/take off all contaminated clothing. Wash skin/shower with plenty of soap and water. See a doctor if necessary.

Eye contact If in contact with eye, immediately flush eyes with large amounts of water of saline for at least 15 minutes. Consult a doctor.

Inhaled	Move the person to a place with fresh air and keep patient breathing clear. If patient shows difficulty in breathing, give oxygen. If the patient ingests or inhales this substance, mouth-to-mouth rescue respiration should not be performed. If patient stops breathing, perform CPR immediately. Seek medical treatment.
Eat	Drink a lot of water, do not induce vomiting, seek medical treatment.
Precaution	Make sure medical staff understand the hazard of product and take effective precautionary measures, in order to protect themselves and prevent contamination spread.

5. Fire Fight Measures

Dangerous characteristic	Its vapor and air can form an explosive mixture, which is easy to burn and explode in case of open flame and high heat. It can react strongly with oxidants. Its vapor is heavier than air, can spread to a considerable distance at a lower place, and will ignite and rekindle in case of fire source. In case of high heat, the pressure in the container increases, and there is a risk of cracking and explosion.
Combustion products	CO, CO ₂
Fire-fighting measures	Move the container from the fire to an open place. Keep sprinkling the fire site container with water to cool it until fire is put out. In case containers have changed color or generated sound from the safety pressure relief device, evacuated immediately
Suitable extinguishing media	Resistant to soluble foam, dry powder, carbon dioxide, sand.
Precautions for fire fighting	Firefighters should wear protective equipment and gas masks, extinguish the fire in the upwind direction, and spray water to keep the fire site container cool. Extinguish fires at a safe distance and with adequate protection. Prevent fire water from polluting surface and groundwater systems.

6. Accidental Release Measures

Emergency processing	Quickly evacuate personnel from the leakage contaminated area to a safe area, isolate them, and strictly restrict access. Cut off the source of fire. It is recommended that emergency personnel wear self-contained positive pressure breathing apparatus and anti-static work clothes. Cut off the source of the leak as much as possible. Prevent the flow into restricted spaces such as sewers and drainage ditches.
Minor leakage	Absorption with sand or other non-combustible materials. It can also be rinsed with plenty of water, diluted with washing water and put into the wastewater system.
Mass leakage	Build embankments or dig pits to contain them. Cover with foam to reduce vapor damage. It is transferred to a tank truck or special collector with an explosion-proof pump and recycled or transported to a waste treatment site for disposal.

7. Handling and Storage

Closed operation, full ventilation; Operators must be specially trained and strictly follow operating procedures. It is recommended that the operator wear a filtering gas mask (half mask), safety glasses, anti-static work clothes, and rubber oil-resistant gloves; Keep away from fire and heat sources, smoking is strictly prohibited in the

workplace; Use explosion-proof ventilation systems and equipment; Prevent vapor leakage into the workplace air; Avoid contact with oxidants, reducing agents, alkalis; The flow rate should be controlled during filling, and there should be a grounding device to prevent the accumulation of static electricity; When handling, it should be loaded and unloaded lightly to prevent damage to packaging and containers. Equipped with corresponding varieties and quantities of fire fighting equipment and leakage emergency treatment equipment. Empty containers may have harmful residues.

Storage Store in a cool, ventilated warehouse. Keep away from fire, heat sources. The warehouse temperature should not exceed 26 °C. Keep the container tightly sealed. It should be stored separately from oxidants, reducing agents and alkalis, and mixed storage should be avoided. Adopt explosion-proof lighting and ventilation facilities. It is forbidden to use mechanical equipment and tools that are prone to sparks. Storage areas should be equipped with emergency treatment equipment for leakage and suitable containers.

8. Exposure control and personal protective measures

Detection method	GC; Furfural spectrophotometry
Engineering control	Maintain adequate ventilation, especially in enclosed areas; Ensure eyewash and shower facilities are available near the workplace; Use explosion-proof electrical appliances, ventilation, lighting and other equipment; Set up emergency evacuation channels and necessary evacuation areas.
Respiratory protection	Wear a filtering gas mask.
Eye protection	Generally, no special protection is required, safety protective glasses can be worn when exposed to high concentrations.
Body protection	Wear antistatic overalls and antistatic protective boots
Hand protection	Wear rubber protective gloves
Other protective	No smoking at workplace, keep personal hygiene. Avoid longer-term or repetitive exposure.

9. Physical and Chemical Properties

Physical state	Slurry in the bottom and supernatant on top
Main ingredients	CNBr-activated Bestarose 4B stored in 100% acetone
Flash point	-18°C (acetone)
Melting point	-95°C (acetone)
Boiling point	56.5°C (acetone)
Relative density	0.8 (acetone) (water=1)
Vapor density	2.0 (acetone) (air=1)
Saturated vapor pressure	24KPa (20°C) (acetone)
Burning heat	1788.7 (kJ/mol)
Critical temperature	235.5°C (acetone)
Critical pressure	4.72MPa (acetone)
Logarithmic value of	-0.24

octanol/water partition coefficient	
Ignition temperature	465°C (acetone)
Ceiling explosive limit	13.0% (V/V) (acetone)
Lower explosive limit	2.2% (V/V) (acetone)
Solubility	◦ Soluble in water, as well as organic solvents including ethanol, ether, chloroform, oils, hydrocarbons, etc
Flash point	-18°C (acetone)
Color	Solvent-Transparent; Slurry-white
Smell	Sweet, fragrant

10. Stability and Reactivity

Stability	Stable
Prohibited content	Strong oxidizing agent, strong reducing agent, strong alkali
Conditions to avoid	N/A
Polymerization hazard	nonpolymerization
Hazardous decomposition products	N/A

11. Toxicological Information

Toxicological data:

Product/component name	experiment	results	Delivery way	species
acetone	LD ₅₀	5800 mg/kg	oral	Big rat
	LD ₅₀	20000 mg/kg	injection	rabbit
	LC ₅₀	44mg/L	suction	mice

Special toxicity:

carcinogenicity	No obvious effect
Mutagenic action	No obvious effect
teratogenicity	No obvious effect
sensitization:	
The suction intake	No obvious effect
Eye	There is some irritation to the respiratory system
Skin	Irritation to the eyes
Specific target organ lines	There is some irritation to the skin
General toxicity	Dangerous to exposure. May cause drowsiness or vertigo
	No toxicity for repetitive exposure

12. Ecological Information

Ecological toxicity

Median lethal concentrationLC ₅₀	8300mg/L/96h (fish)
Median inhibitory concentrationEC ₅₀	18500mg/L/48h (Crustacea)
Median inhibitory concentrationErC ₅₀	7200 mg/L/96h (Algae/aquatic animals)

Other harmful effects Harmful to environment, pay special attention to water body pollution.

13. Disposal

Waste nature	Organic
Waste disposal approach	Reduce waste produced, avoid leakage, penetrate to soil and water source; Resin disposal should follow the environment and related regulation released by local government. Incineration can be applied.
Precaution	Empty package can still have residual hazards. Stay away from heat and fire source, return to producer for recycling if necessary.

14. Transport Information

CN(CN)	31025
UN No	1090
Name(UN)	Flammable liquid(Chromatography resin)
Packing category	II
Marine pollutant	None
Shipping details	Transport vehicles should be equipped with the appropriate fire extinguishing equipment and emergency treatment equipment for leakage.

15. Regulatory Information

Chemical safety law and rule in China:

Chromatography resin is uncatalogued: Inventory of existing chemical substances in China; List of hazardous chemical materials; Occupational exposure limits for hazardous agents in the workplace(Chemical hazardous agents);Frequently used by classification and marking of hazardous chemicals.

This SDS conforms to the following standards and regulations: GB/T 16483-2008,GB 13690-2009,GB 6944-2012,GB/T 15098-2008,GB18218-2018,GB 15258-2009,GB 190-2009,GB/T 191-2008,GB 12268-2012Rules of transportation of dangerous goods: China ministry of transportation; Regulations on the control over safety of dangerous chemicals(China), Recommendations on the transport of dangerous goods(UN RTDG).

16. Other Information

Compiling department: Bestchrom (Shanghai) Biosciences Ltd.----QA

Modification note: The second revision

Reference: UN TRANSPORT OF DANGEROUS GOODS Model Regulations

UN Globally Harmonized System of Classification and Labeling of Chemicals; (GHS) etc.

Declaration: This manual is prepared in accordance with the standard requirements of GB/T 16483-2008 "Regulations for preparation of safety technical instruction of chemical products" (equivalent to ISO 11014:2009) in our best knowledge. The data information in clauses 9~12 are the corresponding data of acetone, so it is only for reference. All materials have unknown hazards. The consignee of this product must formulate safe operation procedures according to the requirements of the MSDS and the actual situation of the site, while operating with caution. Bestchrom is not responsible for the damage caused by handling and expose to the above-mentioned products.