SAFETY DATA SHEET

BENZOTRIAZOLE NEEDLES

CAS No.: 95-14-7

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

BENZOTRIAZOLE
1H-Benzotriazole; BTA; Corrosion Inhibitor BTA
CAS: 95-14-7

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: corrosion inhibitor for copper and copper alloys in cooling water treatment, hydraulic and metalworking fluids, antifreeze formulations, and as an anti-tarnish agent. For industrial/commercial user only.

Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Acute Tox. 4	Acute oral toxicity, Category 4, H302
Skin Irrit. 2	Skin irritation, Category 2, H315
Eye Dam. 1	Serious eye damage, Category 1, H318
Skin Sens. 1	Skin sensitisation, Category 1, H317
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic hazard, Category 2, H411

GHS label elements, including precautionary statements

GHS: Danger

Hazard statements

H302 – Harmful if swallowed.
H315 – Causes skin irritation.
H317 – May cause an allergic skin reaction.
H318 – Causes serious eye damage.
H411 – Toxic to aquatic life with long lasting effects.

Precautionary statements

P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P272: Contaminated work clothing should not be allowed out of the workplace.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352: IF ON SKIN: Wash with plenty of 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.
P310: Immediately call a POISON CENTER/doctor.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P391: Collect spillage.
P501: Dispose of the contents/containers to a licensed hazardous waste contractor.

Other hazards which do not result in classification

Not relevant

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Benzotriazole (1H-Benzotriazole)

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 95-14-7	Benzotriazole (1H-Benzotriazole) — Acute Tox. 4: H302; Skin Irrit. 2: H315; Eye Dam. 1: H318; Skin Sens. 1: H317; Aquatic Chronic 2: H411 – Danger	≥99% (technical/needle grade)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures	Non-applicable

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance immediately, showing the SDS of this product.

By inhalation

Remove the person affected from the area of exposure, provide fresh air and keep at rest. Seek medical attention if discomfort continues.

By skin contact

Remove contaminated clothing. Wash affected skin thoroughly with plenty of water and soap. Seek medical attention if irritation persists.

By eye contact

Rinse eyes thoroughly with lukewarm water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek immediate medical attention (H318).

By ingestion/aspiration

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

Most important symptoms/effects, acute and delayed

Acute and delayed effects are indicated in sections 2 and 11.

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

Not relevant

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Water spray/fog, dry chemical powder, foam, carbon dioxide
Unsuitable: High-pressure water jet (may spread dust)

Specific hazards arising from the chemical

Combustible organic solid. Fine dust may form combustible dust/air mixtures. Thermal decomposition may release oxides of nitrogen and carbon.

Special protective actions for fire-fighters

Wear self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water spray from a safe distance.

Additional provisions

Use water spray to cool fire-exposed containers. Prevent fire-fighting water from entering drains or watercourses. Approach the fire from upwind where possible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Isolate leaks provided there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (see section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders

Wear protective equipment. Keep unprotected persons away. See section 8.

Environmental precautions

Prevent product from entering drains, watercourses or soil (Aquatic Chronic 2). Notify the relevant authority in case of significant environmental release.

Methods and materials for containment and cleaning up

Sweep or vacuum up dry material avoiding dust generation; collect in suitable, labelled containers for disposal or recovery. Avoid dry sweeping that raises dust.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Avoid generating and inhaling dust. Avoid contact with skin and eyes. Provide adequate local/general ventilation.

B. Technical recommendations for the prevention of fires and explosions

Keep away from ignition sources and strong oxidising agents. Control dust accumulation; use non-sparking tools and bond/ground equipment where bulk powder is handled.

C. Technical recommendations on general occupational hygiene

Do not eat, drink or smoke while handling. Wash hands and exposed skin thoroughly after use and before breaks.

D. Technical recommendations to prevent environmental risks

Prevent release to drains, watercourses and soil.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Minimum Temp.	5°C
Maximum Temp.	30°C
Maximum time	24 Months

B. General conditions for storage

Store in a cool, dry, well-ventilated place in tightly closed original containers, away from strong oxidising agents and strong acids/bases. For additional information see subsection 10.5.

Specific end use(s)

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

No specific occupational exposure limit has been established for this substance under Indian or internationally harmonized OEL lists currently referenced. Apply general dust/mist limits (e.g., 10 mg/m³ total inhalable / 3-5 mg/m³ respirable, as applicable) as good industrial hygiene practice.

Appropriate engineering controls

It is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding occupational exposure limits, in addition to individual protective equipment (PPE) as needed. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection

Not normally required with adequate ventilation. Where dust levels are elevated, use a particulate filter respirator (FFP2/P2 type).

C. Specific protection for the hands

Chemical-resistant gloves (nitrile or PVC); replace at first sign of damage.

D. Eye and face protection

Safety goggles or glasses with side shields (H318 – serious eye damage hazard).

E. Bodily protection

Standard chemical-resistant work clothing appropriate to the task.

F. Additional emergency measures

Emergency shower (ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011) and eyewash stations (DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011) should be available.

Environmental exposure controls

Avoid environmental spillage of both the product and its container. See subsection 7.1.D.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid (crystalline needles/flakes)
Appearance	Crystalline solid
Color	White to pale yellow
Odor	Faint, characteristic
Odour threshold	Not established
Volatility	
Boiling point at atmospheric pressure	Decomposes before boiling; reported ~204°C at 10 mmHg (reduced pressure)
Vapour pressure at 20°C	Very low (negligible at room temperature)
Evaporation rate at 20°C	Not relevant (solid)
Product Description	
Density / Relative density at 20°C	1.36 g/cm³
Dynamic / Kinematic viscosity	Not applicable (solid)
Concentration	See section 3
pH	Mildly acidic in aqueous solution; exact value not standardized for this grade
Vapour density at 20°C	Not relevant (solid)
Partition coefficient n-octanol/water (log Pow)	~1.44 (literature)
Solubility in water at 20°C	Slightly soluble, ~20 g/L
Decomposition temperature	>200°C
Melting point/freezing point	98–100°C
Flammability	
Flash Point	Non-applicable (solid)
Flammability (solid, gas)	Combustible solid; dust may be combustible
Autoignition temperature	Not established
Lower / Upper flammability limit	Not relevant (solid, not gas/vapor)
Particle Characteristics	
Median equivalent diameter	Available on request (grade dependent)

** Not relevant due to the nature of the product, not providing information on the properties of its hazards.*

Other information

Explosive properties	Not relevant (non-explosive)
Oxidising properties	Non-oxidising
Corrosive to metals	Not corrosive to common metals (protects copper by design)
Heat of combustion	Not established
Surface tension at 20°C	Not relevant (solid)
Refraction index	Not relevant (solid)

10. STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions of storage and use. May react with strong oxidising agents.

Chemical stability

Chemically stable under the recommended storage conditions.

Possibility of hazardous reactions

Under normal conditions of use, hazardous reactions are not expected. Contact with strong oxidisers may lead to an exothermic reaction.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid prolonged heating above decomposition temperature	Stable	Avoid prolonged exposure to moisture

Incompatible materials

Strong Oxidising Agents	Strong Acids	Strong Bases
Avoid contact	Avoid contact	Avoid contact

Hazardous decomposition products

Thermal decomposition may release oxides of nitrogen (NOx) and carbon (CO, CO2).

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)

May cause gastrointestinal irritation, nausea and vomiting if swallowed in quantity (Acute Tox. 4, H302).

B. Inhalation (acute effect)

Dust may cause irritation of the nose, throat and respiratory tract.

C. Contact with skin and eyes (acute effect)

Causes skin irritation (H315) and may cause an allergic skin reaction (H317, sensitiser). Causes serious eye damage (H318).

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)

Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. IARC: Not listed.

E. Sensitizing effects

Classified as a skin sensitiser, Category 1 (H317), based on available data.

F. Specific target organ toxicity (STOT) – single exposure

Not classified for STOT-SE based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure

Classification criteria are not met based on available data.

H. Aspiration hazard

Not relevant (solid product).

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Benzotriazole CAS: 95-14-7	LD50 oral: 560 mg/kg (literature)	Rat
	LD50 dermal: Not established for this grade	–

12. ECOLOGICAL INFORMATION

Toxic to aquatic life with long lasting effects (Aquatic Chronic 2, H411).

Toxicity

Identification	Acute/Chronic Toxicity	Genus
Benzotriazole CAS: 95-14-7	Available on request (specific LC50/EC50 endpoints not standardized across suppliers/grades; classification per section 2 applies)	Fish / Crustacean

Persistence and degradability

Reported in the literature as poorly biodegradable under standard aerobic biodegradation test conditions; not readily biodegradable.

Bioaccumulative potential

Low bioaccumulation potential expected based on log Pow (~1.44).

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Not established	Low	Moderate mobility (moderately water soluble)	Moderate mobility

Results of PBT and vPvB assessment

Not formally assessed against PBT/vPvB criteria for this product; not expected to meet PBT criteria based on available data.

Other adverse effects

Toxic to aquatic organisms; avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Do not discharge to drains, watercourses or soil. Collect and, where possible, recover for reuse. Dispose of via a licensed hazardous/chemical waste contractor in suitable, labelled, closed containers. Empty containers may retain product residue and should be handled and disposed of with the same precautions as the product.

Refer to national and local regulations on waste management (Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016, as amended).

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not classified as dangerous goods for transport based on available hazard data
14.3 Transport hazard class(es)	–
14.4 Packing group	–
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not classified as dangerous goods for transport based on available hazard data
14.3 Transport hazard class(es)	–
14.4 Packing group	–
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not classified as dangerous goods for transport based on available hazard data
14.3 Transport hazard class(es)	–
14.4 Packing group	–
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
Public Liability Insurance Act, 1991

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H411: Toxic to aquatic life with long lasting effects.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources

United Nations GHS (Rev. 8); ECHA Classification & Labelling Inventory; publicly available peer-reviewed and regulatory toxicological/ecotoxicological literature for this CAS number.

Abbreviations and acronyms

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

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