



SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 07/22/2015

Version 2.0

SECTION 1. Identification

Product identifier

Product number	822315
Product name	1H-Benzotriazole for synthesis
CAS-No.	95-14-7

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Flammable solid, Category 1, H228
Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Inhalation, H332

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Danger

Hazard Statements
H228 Flammable solid.
H302 + H332 Harmful if swallowed or if inhaled.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
P330 Rinse mouth.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	C ₆ H ₅ N ₃ (Hill)
Molar mass	119.12 g/mol

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

1H-Benzotriazole (>= 90 % - <= 100 %)

95-14-7

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration.
Oxygen if necessary. Immediately call in physician.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Eye contact

After eye contact: rinse out with plenty of water.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

Most important symptoms and effects, both acute and delayed

irritant effects, Cough, Nausea, Vomiting, Cyanosis, Dizziness, Drowsiness, Diarrhea, Shortness of breath

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

nitrous gases, nitrogen oxides

Advice for firefighters

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

||Tightly closed. Dry. Keep away from heat and sources of ignition.

Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Application of skin- protective barrier cream recommended.
Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

||Flame retardant antistatic protective clothing.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter A-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	light yellow
Odor	odorless
Odor Threshold	Not applicable
pH	6.0 - 7.0 at 100 g/l 68 °F (20 °C) suspension
Melting point	99 °C
Boiling point/boiling range	662 °F (350 °C) at 1,013 hPa
Flash point	414 °F (212 °C) Method: DIN 51758
Evaporation rate	No information available.
Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 1.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	0.053 hPa at 68 °F (20 °C)
Relative vapor density	No information available.
Density	1.36 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	822315	Version 2.0
Product name	1H-Benzotriazole for synthesis	

Water solubility	19 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 1.44 (experimental) Bioaccumulation is not expected. (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	> 464 °F (> 240 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	ca. 752 °F (400 °C)
Bulk density	ca.500 kg/m³

SECTION 10. Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:
Strong oxidizing agents

Conditions to avoid

Strong heating.

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

Acute oral toxicity

LD50 Rat: 560 mg/kg (RTECS)

absorption

Symptoms: Irritations, Nausea, Vomiting, Diarrhea

Acute inhalation toxicity

LC50 Rat: 1.4 mg/l; 4 h ; dust/mist
(RTECS)

Symptoms: Cough, Nausea, Dizziness, Drowsiness, Shortness of breath
absorption

Acute dermal toxicity

LD50 Rabbit: > 2,000 mg/kg
(External MSDS)

Skin irritation

Rabbit

Result: No irritation

OECD Test Guideline 404

Sensitization

Sensitization test (Magnusson and Kligman):

Result: negative

Method: OECD Test Guideline 406

Genotoxicity in vitro

Mutagenicity (mammal cell test): chromosome aberration.

Result: positive

(National Toxicology Program)

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

ACGIH No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Systemic effects:

After absorption:

Irritations, Nausea, Vomiting, Cyanosis, Drowsiness, Dizziness, Diarrhea, Shortness of breath

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 *Lepomis macrochirus* (Bluegill sunfish): 25 mg/l; 96 h (External MSDS)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 91 mg/l; 48 h (External MSDS)

Toxicity to algae

IC50 *Desmodesmus subspicatus* (green algae): 231 mg/l; 72 h (External MSDS)

Toxicity to bacteria

EC50 activated sludge: 1,060 mg/l

OECD Test Guideline 209

Persistence and degradability

No information available.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 1.44

(experimental)

Bioaccumulation is not expected. (Lit.)

Mobility in soil

No information available.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1325
Proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (1 H-BENZOTRIAZOLE)
Class	4.1
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1325
Proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (1 H-BENZOTRIAZOLE)
Class	4.1
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1325
Proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (1 H-BENZOTRIAZOLE)
Class	4.1
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-G

SECTION 15. Regulatory information

United States of America

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

1H-Benzotriazole

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H228 Flammable solid.

H302 + H332 Harmful if swallowed or if inhaled.

H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 822315
Product name 1H-Benzotriazole for synthesis

Version 2.0

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P273 Avoid release to the environment.

Response

P370 + P378 In case of fire: Use powder for extinction.

Full text of H-Statements referred to under sections 2 and 3.

H228 Flammable solid.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 07/22/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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