

MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Trade name	: Cyanogen bromide
EC no	: 208-051-2
CAS No	: 506-68-3
Product code	: 03130
Formula	: CNBr
Synonyms	: Bromine cyanide

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 1	H300
Acute toxicity (dermal), Category 1	H310
Acute toxicity (inhal.), Category 2	H330
Skin corrosion/irritation, Category 1B	H314
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of classification categories and H statements : see section 16

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Classification according to Directive 67/548/EEC or 1999/45/EC

T+; R26/27/28

C; R34

N; R50/53

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS05

GHS06

GHS09

Signal word (CLP) : Danger

Hazard statements (CLP) : H300+H310+H330 - Fatal if swallowed, in contact with skin or if inhaled
H314 - Causes severe skin burns and eye damage
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (CLP) : P260 - Do not breathe vapours, spray, dust, fume, gas, mist
P264 - Wash ... thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves, protective clothing, eye protection, face protection
P284 - [In case of inadequate ventilation] wear respiratory protection
P302+P352 - IF ON SKIN: Wash with plenty of water/...

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : CYANOGEN BROMIDE FOR SYNTHESIS

CAS No : 506-68-3

EC no : 208-051-2

Full text of R- and H-phrases: see section 16

3.2. Mixture

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after skin contact	: Immediately call a POISON CENTER or doctor/physician. Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after ingestion	: Rinse mouth. Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Causes severe skin burns and eye damage.
Symptoms/injuries after skin contact	: Fatal in contact with skin.
Symptoms/injuries after ingestion	: Fatal if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry powder. Foam. Water spray.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	: Use personal protective equipment as required.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Very toxic to aquatic life with long lasting effects.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. On land, sweep or shovel into suitable containers.
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6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Do not get in eyes, on skin, or on clothing. Avoid contact with skin and eyes. Do not breathe vapours.
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Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep container tightly closed.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection : Protective gloves
Eye protection : Chemical goggles or face shield
Skin and body protection : Wear suitable protective clothing
Respiratory protection : Wear respiratory protection

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Colour : Colorless to white.
Odour : penetrating odor.
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : 50 - 53 °C
Freezing point : No data available
Boiling point : 61 - 62 °C
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : 133 hPa at 20°C
Relative vapour density at 20 °C : 3.62
Relative density : No data available

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Density	: 2.015 g/cm ³
Solubility	: Water: Soluble in water
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Overheating. Open flame. Sparks. Heat.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Oral: Fatal if swallowed. Dermal: Fatal in contact with skin. Inhalation: Fatal if inhaled.
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified

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Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Fatal if swallowed. Fatal in contact with skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Cyanogen bromide (506-68-3)

Persistence and degradability	May cause long-term adverse effects in the environment.
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12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to ...

Ecology - waste materials : Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1889

UN-No. (IMDG) : 1889

UN-No.(IATA) : 1889

UN-No.(ADN) : 1889

UN-No. (RID) : 1889

14.2. UN proper shipping name

Proper Shipping Name (ADR) : CYANOGEN BROMIDE

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Proper Shipping Name (IMDG)	: CYANOGEN BROMIDE
Proper Shipping Name (IATA)	: CYANOGEN BROMIDE
Proper Shipping Name (ADN)	: CYANOGEN BROMIDE
Proper Shipping Name (RID)	: CYANOGEN BROMIDE
Transport document description (ADR)	: UN 1889 CYANOGEN BROMIDE, 6.1 (8), I, (C/E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG)	: UN 1889 CYANOGEN BROMIDE, 6.1 (8), I, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA)	: UN 1889 CYANOGEN BROMIDE, 6.1, I, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN)	: UN 1889 CYANOGEN BROMIDE, 6.1 (8), I, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID)	: UN 1889 CYANOGEN BROMIDE, 6.1 (8), I, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 6.1 (8)

Danger labels (ADR) : 6.1, 8



IMDG

Transport hazard class(es) (IMDG) : 6.1 (8)

Danger labels (IMDG) : 6.1, 8



IATA

Transport hazard class(es) (IATA) : 6.1 (8)

Hazard labels (IATA) : 6.1, 8



ADN

Transport hazard class(es) (ADN) : 6.1 (8)

Danger labels (ADN) : 6.1, 8



RID

Transport hazard class(es) (RID) : 6.1 (8)

Danger labels (RID) : 6.1, 8

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14.4. Packing group


Packing group (ADR)	: I
Packing group (IMDG)	: I
Packing group (IATA)	: I
Packing group (ADN)	: I
Packing group (RID)	: I

14.5. Environmental hazards

Dangerous for the environment	: Yes
Marine pollutant	: Yes
Other information	: No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR)	: TC2
Limited quantities (ADR)	: 0
Excepted quantities (ADR)	: E0
Packing instructions (ADR)	: P002
Mixed packing provisions (ADR)	: MP18
Portable tank and bulk container instructions (ADR)	: T6
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: S10AH, L10CH
Tank special provisions (ADR)	: TU14, TU15, TE19, TE21
Vehicle for tank carriage	: AT
Transport category (ADR)	: 1
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV1, CV13, CV28
Special provisions for carriage - Operation (ADR)	: S9, S14
Hazard identification number (Kemler No.)	: 668
Orange plates	: 
Tunnel restriction code (ADR)	: C/E
EAC code	: 2XE
APP code	: B

- Transport by sea

Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P002
Packing provisions (IMDG)	: PP31
Tank instructions (IMDG)	: T6
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B

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Stowage category (IMDG)	: D
Stowage and handling (IMDG)	: SW2
Segregation (IMDG)	: SG35
MFAG-No	: 157

- Air transport

PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: Forbidden
CAO max net quantity (IATA)	: Forbidden
Special provision (IATA)	: A2
ERG code (IATA)	: 6C

- Inland waterway transport

Classification code (ADN)	: TC2
Special provisions (ADN)	: 802
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP, EP
Number of blue cones/lights (ADN)	: 2

- Rail transport

Classification code (RID)	: TC2
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P002
Mixed packing provisions (RID)	: MP18
Portable tank and bulk container instructions (RID)	: T6
Portable tank and bulk container special provisions (RID)	: TP33
Tank codes for RID tanks (RID)	: S10AH, L10CH
Special provisions for RID tanks (RID)	: TU14, TU15, TU38, TE21, TE22
Transport category (RID)	: 1
Special provisions for carriage – Loading and unloading (RID)	: CW13, CW28, CW31
Hazard identification number (RID)	: 668

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Cyanogen bromide is not on the REACH Candidate List

Cyanogen bromide is not on the REACH Annex XIV List

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15.1.2. National regulations

Germany

AwSV/VwVwS Annex reference : Water hazard class (WGK) 3, strongly hazardous to water (Classification according to VwVwS, Annex 2; WGK No 947)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Acute Tox. 1 (Dermal)	Acute toxicity (dermal), Category 1
Acute Tox. 1 (Oral)	Acute toxicity (oral), Category 1
Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
H300	Fatal if swallowed
H310	Fatal in contact with skin
H314	Causes severe skin burns and eye damage
H330	Fatal if inhaled
H410	Very toxic to aquatic life with long lasting effects
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R34	Causes burns
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
C	Corrosive
N	Dangerous for the environment
T+	Very toxic

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product