## Chemical Safety Data Sheet MSDS / SDS

## **Norbornene**

Revision Date:2024-12-21 Revision Number:1

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

#### **Product identifier**

Product name : Norbornene

CBnumber : CB9170038

CAS : 498-66-8

EINECS Number : 207-866-0

Synonyms : norbornene, Nsc

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.

Uses advised against : none

## **Company Identification**

Company : Chemicalbook

Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing

Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word Danger

## Precautionary statements

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

P273 Avoid release to the environment.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P337+P313 IF eye irritation persists: Get medical advice/attention.

#### Hazard statements

H228 Flammable solid

H319 Causes serious eye irritation

H401 Toxic to aquatic life

H411 Toxic to aquatic life with long lasting effects

## SECTION 3: Composition/information on ingredients

## **Substance**

Product name : Norbornene

Synonyms : norbornene,Nsc

CAS : 498-66-8

EC number : 207-866-0

MF : C7H10

MW : 94.15

## SECTION 4: First aid measures

## Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

## In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

## In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

## Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: Firefighting measures

## **Extinguishing media**

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

## Special hazards arising from the substance or mixture

Carbon oxides

## Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

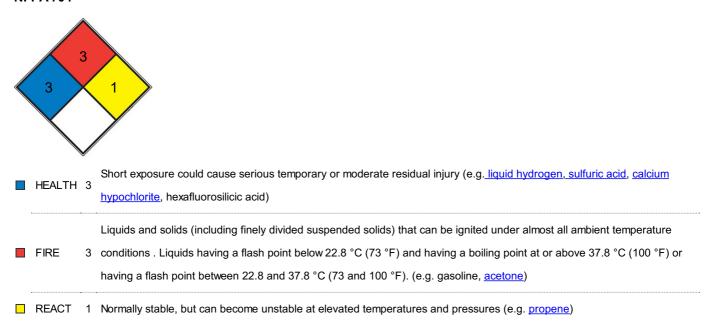
### **Further information**

Use water spray to cool unopened containers.

#### **NFPA 704**

SPEC.

HAZ.



## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

#### **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

#### Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

## Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

#### Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

## control parameter

#### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

### **Exposure controls**

## Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

**Body Protection** 

Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full- face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

| Appearance                              | colourless crystalline   |
|---|--|
| Odour                                   | No data available  |
| Odour Threshold                         | No data available  |
| рН                                      | No data available  |
| Melting point/freezing point            | Melting point/range: 44 - 46 °C - lit.                             |
| Initial boiling point and boiling range | 96 °C - lit.   |
| Flash point                             | -8 °C - closed cup   |
| Evaporation rate                        | No data available  |
| Flammability (solid, gas)               | The substance or mixture is a flammable solid with the category 1. |
| Upper/lower flammability or explosive   | No data available  |
| limits                                  |  |
| Vapour pressure                         | 200,71 hPa at 48,51 °C   |
| Vapour density                          | No data available  |
| Relative density                        | 0,87 g/cm3 at 20 °C  |
| Water solubility                        | 0,13 g/l at 20 °C  |
| Partition coefficient: n-octanol/water  | log Pow: 4,1 at 25 °C  |
| Autoignition temperature                | 450 °C   |
| Decomposition temperature               | No data available  |
| Viscosity                               | No data available  |
| Explosive properties                    | No data available  |
| Oxidizing properties                    | No data available  |
|   |  |

## Other safety information

No data available

## SECTION 10: Stability and reactivity

## Reactivity

No data available

## **Chemical stability**

Stable under recommended storage conditions.

## Possibility of hazardous reactions

No data available

## Conditions to avoid

Heat, flames and sparks.

## Incompatible materials

Strong oxidizing agents

## Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available In the event of fire: see section 5

## **SECTION 11: Toxicological information**

## Information on toxicological effects

#### **Acute toxicity**

LD50 Oral - Rat - male - 9.577 mg/kg (OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 26,59 mg/l (OECD Test Guideline 403)

LD50 Dermal - Rabbit - male - 4.353 mg/kg (OECD Test Guideline 402)

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes. - 24 h

## Respiratory or skin sensitisation

- Rabbit

Result: Did not cause sensitisation on laboratory animals.

## Germ cell mutagenicity

Result: negative

## Carcinogenicity

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

#### Reproductive toxicity

No data available

## Specific target organ toxicity - single exposure

No data available

## Specific target organ toxicity - repeated exposure

No data available

## Aspiration hazard

No data available

#### **Additional Information**

RTECS: RB7900000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## SECTION 12: Ecological information

## **Toxicity**

#### Toxicity to fish

flow-through test LC50 - Danio rerio (zebra fish) - > 7,3 mg/l - 96 h (OECD Test Guideline 203)

#### Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 7,9 mg/l - 48 h (OECD Test Guideline 202)

### Toxicity to algae

EC50 - Desmodesmus subspicatus (green algae) - 24,7 mg/l - 72 h (OECD Test Guideline 201)

## Persistence and degradability

Biodegradability Result: > 25 % - Not biodegradable

(Closed Bottle test)

### Bioaccumulative potential

No data available

#### Mobility in soil

No data available

#### Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Other adverse effects

Toxic to aquatic life with long lasting effects.

## **SECTION 13: Disposal considerations**

## Waste treatment methods

## **Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material

must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

## Contaminated packaging

Dispose of as unused product.

## **SECTION 14: Transport information**

## **UN** number

ADR/RID: 1325 IMDG: 1325 IATA: 1325

## **UN proper shipping name**

ADR/RID: FLAMMABLE SOLID, ORGANIC, N.O.S. (8,9,10-trinorborn-2-ene) IMDG: FLAMMABLE SOLID, ORGANIC, N.O.S. (8,9,10-trinorborn-2-ene)

IATA: Flammable solid, organic, n.o.s. (8,9,10-trinorborn-2-ene)

## Transport hazard class(es)

ADR/RID: 4.1 IMDG: 4.1 IATA: 4.1

**Packaging group** 

ADR/RID: II IMDG: II IATA: II

**Environmental hazards** 

ADR/RID: yes IMDG Marine pollutant: yes IATA: no

Special precautions for user

No data available

## **SECTION 15: Regulatory information**

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

### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: https://www.mem.gov.cn/

## Measures for Environmental Management of New Chemical Substances

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: https://echa.europa.eu/

Korea Existing Chemicals List (KECL):Listed. website: http://ncis.nier.go.kr

New Zealand Inventory of Chemicals (NZIoC):Listed. website: https://www.epa.govt.nz/

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: https://emb.gov.ph/

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: https://www.epa.gov/

Vietnam National Chemical Inventory:Listed. website: https://chemicaldata.gov.vn/

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Not Listed. website: https://www.mee.gov.cn/

## SECTION 16: Other information

## Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit TWA: Time Weighted Average

#### References

- [7] HSDB Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- [8] IARC International Agency for Research on Cancer, website: http://www.iarc.fr/
- [9] IPCS The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- [1] CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- [2] ChemlDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- [3] ECHA European Chemicals Agency, website: https://echa.europa.eu/
- [4] eChemPortal The Global Portal to Information on Chemical Substances by OECD, website:

http://www.echemportal.org/echemportal/index?pageID=0&request\_locale=en

- [5] ERG Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- [6] Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- 【10】 Sigma-Aldrich, website: https://www.sigmaaldrich.com/

#### Disclaimer:

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