

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



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

1.1. Product identifier

Trade name

Naphthalene

CAS number

91-20-3

EC number

202-049-5

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

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Carcinogenicity, hazard category 2

Hazardous to the aquatic environment — Acute hazard category 1

Hazardous to the aquatic environment — Chronic hazard category 1

Acute toxicity, oral, hazard category 4

Flammable solids, hazard category 2

Hazard statements

H228, H302, H351, H400, H410

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Warning

Hazard statements

H228 Flammable solid.

H302 Harmful if swallowed.

H351 Suspected of causing cancer.

H410 Very toxic to aquatic life with long lasting effects.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



Precautionary statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P233 Keep container tightly closed.
P260 Do not breathe dust/fumes/gas/mist/vapours/spray.
P262 Do not get in eyes, on skin, or on clothing.
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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P330 Rinse mouth.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P403 Store in a well-ventilated place.
P405 Store locked up.
P501 Dispose of contents/container to local regulations.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
Naphthalene	91-20-3 202-049-5 - -	100%	Flam. Sol. 2, Acute Tox. 4 - oral, Carc. 2, Aquatic Acute 1, Aquatic Chronic 1	H228, H302, H351, H400, H410 - -	-

Molecular weight

128.17

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



SECTION 4: First aid measures

4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. Continue to rinse for at least 15 minutes. Get medical advice/attention if you feel unwell.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

Information for doctors

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

Eye contact

May cause temporary eye irritation.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use alcohol resistant foam, carbon dioxide or dry powder to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: FLAMMABLE.

Containers can burst violently when heated, due to excess pressure build-up.

Vapours may form explosive mixture with air at room temperature.

Carbon monoxide (CO). Carbon dioxide (CO₂).

Combustible.

Vapours are heavier than air and may travel along the floor and in the bottom of containers.

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

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours and spray mist and contact with skin and eyes. For personal protection, see section 8. Provide adequate ventilation. Remove sources of ignition. Beware of the explosion danger. Take action to prevent static discharges.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Risk of explosion.

6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Work under hood. Take action to prevent static discharges. Use spark-proof tools and explosion-proof equipment. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and laundry thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at room temperature. Store in a dry place. Store in a closed container. Handle and store contents under inert gas. Moisture Sensitive. Keep away from heat and sources of ignition.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

TWA. 10ppm. 50mg/m³. Directive: 91/322/EEC

DNEL/DMEL

Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
Naphthalene (-/-)	DNEL	Chronic (long term) Inhalation	25 mg/m ³	Workers	Local
Naphthalene (-/-)	DNEL	Chronic (long term) Inhalation	25 mg/m ³	Workers	Systemic
Naphthalene (-/-)	DNEL	Chronic (long term) Dermal	3.57 mg/m ³	Workers	Systemic

PNEC/PEC

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
Naphthalene (-/-)	PNEC	Freshwater	2.4 µg/l
Naphthalene (-/-)	PNEC	Sediment (freshwater)	67.2 µg/kg sediment dw
Naphthalene (-/-)	PNEC	Intermittent releases	20 µg/l
Naphthalene (-/-)	PNEC	Sewage Treatment Plant	2.9 mg/l
Naphthalene (-/-)	PNEC	Soil	53.3 µg/kg
Naphthalene (-/-)	PNEC	Marine water	2.4 µg/l
Naphthalene (-/-)	PNEC	Sediment (marine water)	67.2 µg/kg

8.2. Exposure controls

Personal Protective Equipment Symbols



Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves.

Recommended gloves: Nitrile.

Glove Thickness: 0.11mm

Breakthrough time: 8 hours

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains. Risk of explosion.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Solid

Colour

White.

Odour

Aromatic.

Melting point / freezing point

80 - 82 °C

Boiling point or initial boiling point and boiling range

218 °C

Flammability

No data available

Lower and upper explosion limit

0.9 - 5.9 %

Flash point

78.5 °C

Method

CC (Closed cup).

Auto-ignition temperature

526 - 587 °C

Decomposition temperature

No data available

pH

No data available

Kinematic viscosity

No data available

Solubility

0.0308 g/l

Partition coefficient n-octanol/water

3.4

Vapour pressure

0.072 hPa

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



Density and/or relative density

1.08 g/cm³

Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Forms explosive mixtures with air on intense heating.

15 (approx) Kelvin below the flash point is to be rated as critical.

10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Violent reactions possible with:

Oxidising materials.

chromium(VI) oxide

benzoyl chloride

aluminium chloride

Risk of explosion.

Nitrous gases (NO_x).

10.4. Conditions to avoid

Heat, sparks, flames.

10.5. Incompatible materials

There are no known reactivity hazards associated with this product.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals
Naphthalene 91-20-3 / 202-049-5	LD50	710 mg/kg	Oral	-	Mouse
Naphthalene 91-20-3 / 202-049-5	LC50	>0.4 mg/l (vapours)	4 hours	Inhalation.	Rat
Naphthalene 91-20-3 / 202-049-5	LD50	20,000 mg/kg	-	Dermal	Rabbit

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
Naphthalene 91-20-3 / 202-049-5	No skin irritation.	24 hours	Rabbit

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
Naphthalene 91-20-3 / 202-049-5	No eye irritation.	24 hours	Rabbit

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
Naphthalene 91-20-3 / 202-049-5	Negative.	Guinea Pig	Maximization Test

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Exposure route	Metabolic activation / Exposure	Species	Method / Guideline
Naphthalene 91-20-3 / 202-049-5	Positive.	-	metabolic activation	Chinese Hamster cells: Ovary	Mutagenicity (mam-mal cell test): Chromosome aberration:
Naphthalene	Negative.	-	with and without	Salmonella typh-	Ames test

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



Product / Substance name CAS / EC no.	Result	Exposure route	Metabolic activation / Exposure	Species	Method / Guideline
91-20-3 / 202-049-5			metabolic activation	imurium	
Naphthalene 91-20-3 / 202-049-5	Negative.	Oral	-	Rat Liver.	unscheduled DNA synthesis assay
Naphthalene 91-20-3 / 202-049-5	Negative.	Intraperitoneal.	-	Mouse bone marrow	Micronucleus test

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute fish toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Naphthalene 91-20-3 / 202-049-5	LC50	7.9 mg/l	96 hours	Pimephales promelas (Fat-head Minnow)
Naphthalene 91-20-3 / 202-049-5	LC50	1.6 mg/l	96 hours	Onchorhynchus mykiss (Rainbow trout)

Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Naphthalene 91-20-3 / 202-049-5	EC50	2.96 mg/l	4 hours	Pseudokirchneriella subcapitata

Acute crustacean toxicity

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Naphthalene 91-20-3 / 202-049-5	EC50	2.16 mg/l	48 hours	Daphnia magna

Chronic toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Naphthalene 91-20-3 / 202-049-5	LC50	2.1 mg/l	96 hours	Oncorhynchus kisutch (coho salmon)

12.2. Persistence and degradability

Persistence and degradability

Product / Substance name CAS / EC no.	Type of test	Duration	Result	Degradation
Naphthalene 91-20-3 / 202-049-5	aerobic	28 days	2%	The product is not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential

Product / Substance name CAS / EC no.	Bioconcentration factor (BCF)	Duration	Species	Temperature	Remark
Naphthalene 91-20-3 / 202-049-5	36.5-168	56 days	Cyprinus carpio (Carp)	25°C	Bioaccumulation: Is not expected to be bioaccumulable.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. UN number

1334

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

NAPHTHALENE, REFINED

IMDG proper shipping name

NAPHTHALENE, CRUDE or NAPHTHALENE, REFINED

IATA proper shipping name

Naphthalene, refined

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



14.3. Transport hazard class(es)

Label

ADR/RID/ADN



4.1 Environmental hazard

IMDG



4.1 Environmental hazard

IATA



4.1 Environmental hazard

ADR / RID Class

4.1

ADR / RID Classification code

F1

ADR / RID hazard identification number

40

IMDG Class

4.1

IATA Class

4.1

ADN Class

4.1

ADN Class Code

F1

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Naphthalene

Version number: 1
Issued: 2023-11-24



14.4. Packing group

ADR / RID / ADN: III
IMDG: III
IATA: III

14.5. Environmental hazards

IMDG EmS
F-A, S-G

14.6. Special precautions for user

Tunnel restriction code: E
Transport category: 3

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC08

SECTION 15: Regulatory information

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

EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations

Regulation (EU) 2019/1021: Naphthalene
Persistent Organic Pollutants Regulations: Naphthalene
Directive: 2012/18/EU: E1 ENVIRONMENTAL HAZARDS

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Phrase meaning

Carc. 2 - Carcinogenicity, hazard category 2
Aquatic Acute 1 - Hazardous to the aquatic environment — Acute hazard category 1
Aquatic Chronic 1 - Hazardous to the aquatic environment — Chronic hazard category 1
Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4
Flam. Sol. 2 - Flammable solids, hazard category 2
H228 Flammable solid.
H302 Harmful if swallowed.
H351 Suspected of causing cancer.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.