Industrial Química del Nalón, S.A.
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EDITION: 4th .
REVISION: 1.

MATERIAL SAFETY DATA SHEET

(91/155/EC)

NAPHTHALENE

1.- *IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING*

1.1.- Identification of the substance

Trade name: Naphthalene

Molecular formula: $C_{10}H_8$

1.2.- Use of the substance/preparation

Intermediate for organic synthesis

Repellent

1.3.- Company/undertaking identification

Industrial Química del Nalón, S.A.

Avda. Galicia 31

E-33005 Oviedo

Spain

Tel: +34 98.598.26.00

Fax: +34 98.598.26.26

(See item 16.2 –Contact–)

1.4.- Emergency information

Tel: +34 98.598.26.61

Fax: +34 98.598.26.66

USA (For emergency only): 800-424-9300

2.- ***COMPOSITION / INFORMATION ON INGREDIENTS***

2.1.- Chemical Description

Polycyclic Aromatic Hydrocarbon (two condensed aromatic rings), substance purity above 96.5%.

2.2.- IUPAC Name

Naphthalene

2.3.- CAS Number

91-20-3 Naphthalene, pure

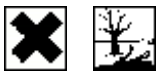
2.4.- Identification Number (s)

EINECS Number: 202-049-5

Index Number: 601-052-00-2

3.- ***HAZARDS IDENTIFICATION***

3.1.- Hazard designation:



Carc. Cat.3

Xn: Harmful

N: Dangerous for the environment

3.2.- Information concerning particular hazards for human and environment

R40: Limited evidence of a carcinogenic effect

R22: Harmful if swallowed

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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4.- ***FIRST - AID MEASURES***

SEEK MEDICAL ATTENTION IMMEDIATELY IF ANY SYMPTOMS OF POISONING ARISE.
CONTINUE MEDICAL OBSERVATION FOR AT LEAST 48 HOURS.
REMOVE SUBJECT FROM ANY EXPOSURE SOURCE.

After inhalation: Remove subject from exposure area to fresh air. Administer oxygen or artificial respiration in severe cases.

After skin contact: Remove all contaminated clothing. Wash exposed area with non abrasive soap and water.

After eye contact: Flush open eyes immediately with plenty of water.

After ingestion: If conscious, first try to induce vomiting and then give copious quantities of water. Do not give anything by mouth to an unconscious person. Get medical help immediately.

5.- ***FIRE - FIGHTING MEASURES***

5.1.- Extinguishing media:

- **Suitable**: Dry chemicals, carbon dioxide, sand, foam, steam or water fog.
- **Not Suitable**: Water jet (may spread fire).

5.2.- Special hazards caused by the material, its products of combustion or resulting gases

Incomplete combustion in a fire may result in a release of toxic carbon monoxide.

5.3.- Protective equipment

Full-body protective clothing, including breathing apparatus.

6.- ***ACCIDENTAL RELEASE MEASURES***

6.1.- Personal precautions:

Wear full-body, industrial-type work clothing, including chemical resistant gloves, boots and goggles.

Avoid breathing vapours/dust or contact with skin and eyes. Ventilate the area if the spill occurs indoors.

Keep away from ignition sources

6.2.- Environmental precautions:

Keep away from drains, surface- and ground-water and soil. Avoid any dusting.

6.3.- Cleaning up methods:

Vacuum or sweep up and place in containers for safe disposal. Containers should be sealed and labelled.

Dispose of contaminated material and waste according to item 13.1.

Ensure adequate ventilation.

7.- ***HANDLING AND STORAGE***

7.1.- Handling:

Ensure adequate ventilation and keep away from ignition sources and static electricity.

Prevent formation of dust. Dust can combine with air to form an explosive mixture.

Use chemical resistant gloves, safety glasses and dust mask.

Keep breathing equipment ready.

7.2.- Storage:

Keep away from open fire, ignition sources or strong oxidizing substances. Guard against static electricity.

If solid, use adequate ventilation especially on the floor level.

If molten, store at 90-100 °C.

8.- ***EXPOSURE CONTROLS / PERSONAL PROTECTION***

TRAIN WORKERS AND USERS IN SAFETY MEASURES

8.1.- Additional information about design of technical facilities

General or local exhaust ventilation may be necessary (see section 7)

8.2.- Components with limit values that require monitoring at the workplace

91-20-3 naphthalene, pure

OES: Short term value: 80 mg/m^3, 15 ppm

Long term value: 53 mg/m^3, 10 ppm

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8.3.- General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and toilet visits.

Avoid contact with eyes and skin.

Do not drink, eat, smoke or sniff while working.

Shower or take a bath at the end of work. Steam baths are recommended.

8.4.- Respiratory protection

Breathing protection is recommended (filter ABEK)

8.5.- Protection of hands

Impermeable and chemical resistant gloves (heat resistant gloves if molten).

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

8.6.- Material of gloves

Butyl rubber, BR

Nitrile rubber, NBR

Neoprene

8.7.- Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Discard gloves as soon as any signs of degradation are noticed (e.g. swelling).

8.8.- Eye protection

Tightly sealed safety glasses or chemical grade goggles.

8.9.- Body protection

Wear full-body, industrial-type work clothing.

Do not use contaminated clothing.

9.- ***PHYSICAL AND CHEMICAL PROPERTIES***

9.1.- General information

Form: Crystalline at room temperature (sublimates). Liquid above melting point.

Colour: Yellow to white

Odour: Characteristic

9.2.- Change in conditions

Boiling point: 218 ºC

Melting range: 78.5-80.25 ºC

9.3.- Flash point: 80 °C (Method ASTM D93).

9.4.- Flammability: Flammable

9.5.- Ignition temperature: 540 ºC

9.6.- Explosion limits

Lower: 0.9 vol%

Upper: 5.9 vol%

9.7.- Vapour pressure at 20 ºC: 0.04 hPa

9.8.- Density at 20 ºC: 1.145 g/cm^3

9.9.- Solubility in / miscibility with water at 20 ºC: 0.03 g/l

9.10.- Segregation coefficient (n-octanol/water): 3.37 log POW

9.11.- Dynamic viscosity at 85 ºC: 0.9 mPa

10.- ***STABILITY AND REACTIVITY***

10.1.- Conditions to avoid

Sources of ignition.

10.2.- Materials to avoid

Contact with strong oxidizing agents.

10.3.- Hazardous decomposition products

No decomposition if used according to specifications. The substances arising from thermal decomposition cannot be accurately predicted. Any fumes/vapours are potentially irritant/toxic and suitable protective equipment should be worn.

11.- ***TOXICOLOGICAL INFORMATION***

11.1.- Acute toxicity. LD/LC50 values relevant for classification:

91-20-3 naphthalene, pure

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2500 mg/kg (rat)
Inhalative	LC50/ 4h	>100 mg/l (rat)

11.2.- Primary irritant effect

On the skin: Slightly irritant (rabbit)

On the eye: not irritant (rabbit)

Sensitisation: No sensitising effect known

Subacute to chronic toxicity: dermal 3 mon (rat): NOEL >300 mg/(kg*d)

11.3.- Additional toxicological information

Mutagenicity: negative (bacteria)

12.- ***ECOLOGICAL INFORMATION***

12.1.- General notes

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Poisonous for fish and plankton.

Very toxic for aquatic organisms.

12.2.- Type of test effective concentration method assessment

Fish toxicity: LC50 (96 h) = 0.12 mg/l

Daphnia toxicity: EC50 (48 h) = 2-17 mg/l

Algae toxicity: EC50 (48 h) = < 1 mg/l

13.- ***DISPOSAL CONSIDERATIONS***

13.1.- Product

Must be in accordance with local authority and national legislation. Dispose of as Toxic and Hazardous Waste (Directive 78 / 319 / EC).

Must not be disposed together with household garbage or strong oxidizing agents. Do not allow product to reach sewage system.

13.2.- Uncleaned packaging

Same as for product

14.- ***TRANSPORT INFORMATION***

14.1.- Land transport ADR/RID (cross-border)

	Molten Product	**Solid Product**
ADR/RID class:	4.1. Molten flammable solids	4.1.6ºc. Flammable solids.
Hazard index number:	44	40
Packaging group:	III	III
UN no.:	2304	1334
Hazard label:	4.1	4.1
Description of goods:	Naphthalene, molten	Naphthalene, crude or refined

14.2.- Maritime transport

	Molten Product	**Solid Product**
IMDG class:	4.1	4.1
UN number:	2304	1334
Label:	4.1	4.1
Packaging group:	III	III
EMS number:	F-A, S-G	F-A, S-G
Marine pollutant:	No	No
Proper shipping name:	Naphthalene, molten	Naphthalene, crude or refined

14.3.- Air transport ICAO-TI and IATA-DGR

ICAO/IATA class: 4.1

UN/ID number: 1334

Packaging group: III

Correct technical name: Naphthalene, crude or refined

15.- ***REGULATORY INFORMATION***

The product has been classified and marketed in accordance with EU Directives/Ordinance on Hazardous Materials (67/478/EEC and 1999/45/EC) and their implementations

15.1.- Code letter and hazard designation of product

Xn: Harmful

N: Dangerous for the environment

15.2.- Risk phrases

R40: Limited evidence of a carcinogenic effect

R22: Harmful if swallowed

R50/53: Very toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment.

15.3.- Safety phrases

S2: Keep out of the reach of children

S36/37: Wear suitable protective clothing and gloves

S46: If swallowed, seek medical advice immediately and show this container or label

S60: This material and its container must be disposed of as hazardous waste

S61: Avoid release to the environment. Refer to special instructions/safety data sheet.

15.4.- Water hazard class

Hazard class 3 (assessment by list): Extremely hazardous for water

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16.- ***OTHER INFORMATION***

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

16.1.- Department Issuing MSDS: R&D Department

16.2.- Contact: Juan José Fernández