Material Safety Data Sheet
REFINED NAPHTHALENE

Section 1 - Product Identification

Synonyms : Naphthalene
Chemical Formula : C10H8
Company Identification : Tradeasia International Pte. Limited
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore
Tel: +65-6227 6365
Fax: +65-6225 6286
Email: contact@chemtradeasia.com
Recommended use : Intermediate for organic synthesis Repellent

Section 2 – Composition/Information on Ingredients

Chemical Name	EC No/CAS No	Purity, %
Naphthalene	91-20-3	max. 99.9

Section 3 – Hazards Identification

3.1 Classification
Classification according to Regulation (EC) No 1272/2008
Flammable solids (Category 2), H228
Acute toxicity, Oral (Category 4), H302
Carcinogenicity (Category 2), H351
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

3.2 Label elements
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.
Precautionary Statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention
Supplemental Hazard Statements none

Section 4 – Composition/ information on ingredients

4.1 Substances

Formula : C10H8
Molecular weight : 128.17 g/mol
CAS-No. : 91-20-3
EC-No. : 202-049-5
Index-No. : 601-052-00-2

Section 5 – First-Aid Measures

5.1. Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

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

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

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

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

N.A.

Section 6 – Fire Fighting Measures

6.1. Suitable Extinguishing media

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

6.2. Specific hazards arising from the chemical

Carbon oxides
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 vapours possible in the event of fire.

6.3. Special protective actions for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

6.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 7 – Accidental Release Measures

7.1. Personal precautions, protective equipment and emergency procedures

UPersonal 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.

7.2. Environmental precautions
Do not let product enter drains. Risk of explosion

7.3. Methods and material 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 8 – Handling and Storage

8.1. Precautions for safe Handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture.
Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.
Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

8.2. Conditions for safe storage, including any incompatibilities
Tightly closed. Keep away from heat and sources of ignition.

Section 9 – Exposure Controls/Personal Protection

9.1 Additional information about design of technical facilities
General or local exhaust ventilation may be necessary
9.2. Components with limit values that require monitoring at the workplace
91-20-3 naphthalene, pure
OES: Short term value: 80 mg/m3, 15 ppm
Long term value: 53 mg/m3, 10 ppm
CHAN
9.3. 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.
9.4. Respiratory protection
Breathing protection is recommended (filter ABEK)
9.5.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.
9.6.Material of gloves
Butyl rubber, BR
Nitrile rubber, NBR
Neoprene
9.7. 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).

9.8. Eye protection
Tightly sealed safety glasses or chemical grade goggles.

Section 10 – Physical and Chemical Properties

10.1. Information on basic physical and chemical properties
Appearance Form solid
Colourwhite
Safety data
pH no data available
Melting
point/freezing point
Melting point/range: 79.5 - 81.0 °C (175.1 - 177.8 °F)
Boiling point 218 °C (424 °F) - lit.
Flash point 80.0 °C (176.0 °F) - closed cup
Flammability (solid,gas)
The substance or mixture is a flammable solid with the category 1.
Ignition temperature 526 °C (979 °F)
Auto-ignition
temperature
526.0 °C (978.8 °F)
Lower explosion limit 0.9 %(V)
Upper explosion limit 5.9 %(V)
Vapour pressure
1.3 hPa (1.0 mmHg) at 53.0 °C (127.4 °F)
0.04 hPa (0.03 mmHg) at 25.0 °C (77.0 °F)

10.2. Other information
Density no data available
Water solubility no data available
Partition coefficient n-octanol/water log Pow: 3.30

Section 11 – Stability and Reactivity

11.1. 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.

11.2. Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) . Stable under recommended storage conditions.

11.3. Possibility of hazardous reactions
N.A

11.4. Conditions to avoid:
Heat, flames and sparks. Strong heating.

11.5. Incompatible materials
Strong oxidizing agents.

11.6. Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

Section 12 – Toxicological Information

12.1 Health effects associated with ingredients
LD50 Oral - Mouse - female - 710 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Rat - male and female - 4 h - > 0.4 mg/l
(OECD Test Guideline 403)
LD50 Dermal - Rabbit - 20,000 mg/kg
Remarks: (RTECS)

12.2 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)

Section 13 – Ecological Information

13.1.Toxicity
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.

13.2.3. Bioaccumulative potential
Cyprinus carpio (Carp) - 56 d at 25 °C(Naphthalene)
Bioconcentration factor (BCF): 36.5 - 168 (OECD Test Guideline 305)
Remarks: Bioaccumulation is unlikely

13.4. Mobility in soil
N.A

13.5. Other adverse effects
N.A

Section 14 – Disposal Considerations

14.1. Disposal methods
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Section 15 – Transport Information

15.1 UN number
ADR/RID: 1334 IMDG: 1334 IATA: 1334

15.2 UN proper shipping name
ADR/RID: NAPHTHALENE, REFINED
IMDG: NAPHTHALENE, REFINED
IATA: Naphthalene, refined
15.3 Transport hazard class(es)
ADR/RID: 4.1 IMDG: 4.1 IATA: 4.1
15.4 Packaging group
ADR/RID: III IMDG: III IATA: III
15.5 Environmental hazards
ADR/RID: yes IMDG Marine pollutant: yes IATA: no
15.6 Special precautions for user
N.A

Section 16 – Regulatory Information

16.1. Safety, health and environmental regulations
This material safety data sheet complies with the requirements of Regulation (EC) No.1907/2006.
National legislation
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances

16.2 **Chemical Safety Assessment**
For this product a chemical safety assessment was not carried out

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List
16.2. List of relevant hazard statements and precautionary statements used in this MSDS

Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed
Precautionary Statements
Prevention
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response
P308 + P313: If exposed or concerned: get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.
Storage
P405: Store locked up.
Disposal
P501: Dispose of contents/container to in accordance with local regulations.

16.3. References

1. Litovitz T L, Norman S A, Veltri J C, Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg. Med. (1986), 4, 427-458
2. Denton SM (1996). Acute oral toxicity study in the rat: anhydrous boric acid. Final report. Report no.: 1341/7-1032.
3. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88 2580 (1987), PB88 213475/XAB
4. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277
6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
7. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
9. Hansveit and Oldersma, 2000; TNO Nutrition and Food Research Institute. Report No. V99.157.
10. Gersich, FM (1984a). Environ.Toxicol.Chem., 3 #1, 89-94 (1984)
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For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.4. Disclaimer of Liability

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