Tetrahydronaphthalene (THN)

Safety Data Sheet

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SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Trade name	:	Tetrahydronaphthalene (THN)
CAS-No.	:	119-64-2
Product code	:	NS-THN
Formula	:	C10H12
Synonyms	:	Naphthalene 1,2,3,4-tetrahydride / Naphthalene, 1,2,3,4-tetrahydro- / 1,2,3,4-Tetrahydronaphthalene / Tetralin / Naphthalene 1,2,3,4-tetrahydride / Naphthalene, 1,2,3,4-tetrahydro- / 1,2,3,4-Tetrahydronaphthalene / Tetralin

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	Solvent

1.3. Supplier

Monument Chemical
5501 West Baker Road
Baytown, TX 77520 - USA
T (281) 424-1255
sds@monumentchemical.com - www.monumentchemical.com

1.4. Emergency telephone number

Emergency number	:	24 HR CHEMTREC: 1-800-424-9300; 24HR Emergency Assistance: 1-281-424-1255

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids Category 4	H227	Combustible liquid
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Carcinogenicity Category 2	H351	Suspected of causing cancer
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways
Hazardous to the aquatic environment - Acute Hazard Category 2	H401	Toxic to aquatic life
Hazardous to the aquatic environment - Chronic Hazard Category 2	H411	Toxic to aquatic life with long lasting effects

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H227 - Combustible liquid
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H351 - Suspected of causing cancer
H401 - Toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :
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, open flames, sparks. - No smoking.
P264 - Wash hands thoroughly after handling.
P273 - Avoid release to the environment.

P280 - Wear eye protection, protective clothing, protective gloves.
P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER
P302+P352 - If on skin: Wash with plenty of water
P308+P313 - If exposed or concerned: Get medical advice/attention.
P321 - Specific treatment (see a doctor on this label)
P331 - Do NOT induce vomiting.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry extinguishing powder, Water spray to extinguish.
P391 - Collect spillage.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : May form explosive peroxides.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name : Tetrahydronaphthalene
CAS-No. : 119-64-2

Name	Product identifier	%
1,2,3,4-tetrahydronaphthalene	(CAS-No.) 119-64-2	94 - 99
naphthalene	(CAS-No.) 91-20-3	0 - 2

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Irritation.
Symptoms/effects after ingestion : Risk of lung edema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Fire hazard : Combustible liquid.
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

1,2,3,4-tetrahydronaphthalene (119-64-2)
Not applicable

naphthalene (91-20-3)		
ACGIH	Local name	Naphthalene
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Hematologic eff; URT & eye irr; Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	50 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	10 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA
IDLH	US IDLH (ppm)	250 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	50 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	10 ppm

naphthalene (91-20-3)		
NIOSH	NIOSH REL (STEL) (mg/m³)	75 mg/m³
NIOSH	NIOSH REL (STEL) (ppm)	15 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Colorless to pale yellow liquid.
Color	:	clear, light yellow
Odor	:	aromatic
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	-35.8 °C
Freezing point	:	-33 °F
Boiling point	:	405 °F
Flash point	:	> 150 °F
Relative evaporation rate (butyl acetate=1)	:	< 1
Flammability (solid, gas)	:	Not applicable.
Vapor pressure	:	0.24 hPa (at 20 °C)
Relative vapor density at 20 °C	:	4.55
Relative density	:	0.972 at 68 °F
Specific gravity / density	:	0.967 - 0.971 g/cm³ (at 20 °C)
Molecular mass	:	132.21 g/mol
Solubility	:	Insoluble in water. Soluble in ethanol. Soluble in methanol. Soluble in ether. Soluble in acetone. Soluble in 1-butanol. Soluble in aniline. Soluble in petroleum spirit. Soluble in chloroform. Soluble in oils/fats. Soluble in chlorinated hydrocarbons. Soluble in turpentine. Soluble in gasoline. Water: 42.7 mg/l (at 20 °C)
Log Pow	:	3.78 (at 20 °C)
Auto-ignition temperature	:	385 °C
Decomposition temperature	:	No data available
Viscosity	:	1.368 cP at 68 °F
Viscosity, kinematic	:	2.26 mm²/s (20 °C)
Viscosity, dynamic	:	2.2 mPa.s (20 °C)
Explosion limits	:	0.8 - 5
Explosive properties	:	No data available

Oxidizing properties : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

1,2,3,4-tetrahydronaphthalene (119-64-2)	
LD50 oral rat	2860 mg/kg
LD50 dermal rabbit	16800 mg/kg
LC50 inhalation rat (mg/l)	> 1.8 mg/l air (8 h, Rat, Male, Experimental value)
ATE US (oral)	2860 mg/kg body weight
ATE US (dermal)	16800 mg/kg body weight

naphthalene (91-20-3)	
LD50 dermal rat	> 2500 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg body weight
LC50 inhalation rat (mg/l)	> 0.34 mg/l (Exposure time: 1 h)
ATE US (oral)	533 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer.

1,2,3,4-tetrahydronaphthalene (119-64-2)	
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity

naphthalene (91-20-3)	
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity, Reasonably anticipated to be Human Carcinogen
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : May be fatal if swallowed and enters airways.

Symptoms/effects after skin contact : Irritation.

Symptoms/effects after ingestion : Risk of lung edema.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects. Toxic to aquatic life.

1,2,3,4-tetrahydronaphthalene (119-64-2)	
LC50 fish 1	3.2 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [semi-static])
EC50 Daphnia 1	9.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	6.9 mg/l (48 h, Oryzias latipes)
ErC50 (algae)	11 mg/l (EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value)

naphthalene (91-20-3)	
LC50 fish 1	5.74 - 6.44 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	2.16 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Daphnia 2	1.96 mg/l (Exposure time: 48 h - Species: Daphnia magna [Flow through])

12.2. Persistence and degradability

1,2,3,4-tetrahydronaphthalene (119-64-2)	
Persistence and degradability	May cause long-term adverse effects in the environment.
Biochemical oxygen demand (BOD)	0 g O_2/g substance
ThOD	3.147 g O_2/g substance
BOD (% of ThOD)	0

naphthalene (91-20-3)	
Persistence and degradability	Not established.
Biochemical oxygen demand (BOD)	0 g O_2/g substance
Chemical oxygen demand (COD)	0.22 g O_2/g substance
ThOD	2.99 g O_2/g substance

12.3. Bioaccumulative potential

1,2,3,4-tetrahydronaphthalene (119-64-2)	
BCF fish 1	118 - 536 (Cyprinus carpio, Test duration: 8 weeks)
BCF other aquatic organisms 1	130 - 1300 (Mytilidae, QSAR)
Log Pow	3.78 (at 20 °C)
Bioaccumulative potential	Not established.

naphthalene (91-20-3)	
BCF fish 1	30 - 430
Log Pow	3.6
Bioaccumulative potential	Not established.

12.4. Mobility in soil

1,2,3,4-tetrahydronaphthalene (119-64-2)	
Surface tension	0.033 N/m (25 °C, 100 %)
Ecology - soil	Highly mobile in soil.

naphthalene (91-20-3)	
Surface tension	0.03 N/m (100 °C)

naphthalene (91-20-3)	
Ecology - soil	Adsorbs into the soil.

12.5. Other adverse effects

naphthalene (91-20-3)	
1990 Hazardous Air Pollutant (Clean Air Act)	Yes

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : NA1993, Combustible liquid, n.o.s. (tetralin and naphthalene), III

UN-No.(DOT) : NA1993

Proper Shipping Name (DOT) : Combustible liquid, n.o.s.
tetralin and naphthalene

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT) : III - Minor Danger

Dangerous for the environment : Yes

Marine pollutant : Yes (IMDG only)

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name

DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Other information : No supplementary information available.

Transport by sea

Transport document description (IMDG) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (tetralin and naphthalene), 9, III

UN-No. (IMDG) : 3082

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Class (IMDG)	:	9 - Miscellaneous dangerous substances and articles
Packing group (IMDG)	:	III - substances presenting low danger
Limited quantities (IMDG)	:	5 L
EmS-No. (1)	:	F-A
EmS-No. (2)	:	S-F
Marine pollutant	:	Yes

Air transport

Transport document description (IATA)	:	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (tetralin and naphthalene), 9, III
UN-No. (IATA)	:	3082
Proper Shipping Name (IATA)	:	Environmentally hazardous substance, liquid, n.o.s.
Class (IATA)	:	9 - Miscellaneous Dangerous Goods
Packing group (IATA)	:	III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Tetrahydronaphthalene (119-64-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Naphthalene	CAS-No. 91-20-3	0 - 2%

naphthalene (91-20-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	100 lb

15.2. International regulations

CANADA

Tetrahydronaphthalene (119-64-2)
Listed on the Canadian DSL (Domestic Substances List)

naphthalene (91-20-3)	
Listed on the Canadian DSL (Domestic Substances List)	
Toxic Substance (CEPA – Schedule I)	Yes

EU-Regulations

Tetrahydronaphthalene (119-64-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

naphthalene (91-20-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Tetrahydronaphthalene (119-64-2)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals)

naphthalene (91-20-3)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

WARNING This product can expose you to naphthalene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

naphthalene (91-20-3)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No	5.8 µg/day	

1,2,3,4-tetrahydronaphthalene (119-64-2)
U.S. - Pennsylvania - RTK (Right to Know) List

naphthalene (91-20-3)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

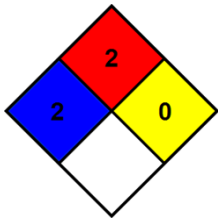
SECTION 16: Other information

Revision date : 04/06/2018

Full text of H-phrases:

H227	Combustible liquid
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H351	Suspected of causing cancer
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard	:	2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard	:	2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.
NFPA reactivity	:	0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012)

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