1. IDENTIFICATION

Product name: Naphthalene Zone Refined (number of passes: 23)
Product code: N0004
Product use: For laboratory research purposes.
Restrictions on use: Not for drug or household use.

Company:
TCI America
9211 N. Harborgate Street
Portland, OR 97203 U.S.A.

Telephone:
+1-800-423-8616 / +1-503-283-1681
Fax:
+1-888-520-1075 / +1-503-283-1987
e-mail: sales-US@TCIchemicals.com
www.TCIchemicals.com

Emergency telephone number:
Chemical Emergencies: TCI America (8:00am - 5:00pm) PST
+1-503-286-7624
Transportation Emergencies: Chemtrec 24-Hour
+1-800-424-9300 (U.S.A.)
+1-703-527-3887 (International)

Responsible department:
TCI America
Environmental Health Safety and Security
+1-503-286-7624

2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200:
WHMIS 2015:
Acute Toxicity - Oral [Category 4]
Eye Damage/Irritation [Category 2B]
Sensitization - Skin [Category 1]
Carcinogenicity [Category 2]
Specific Target Organ Toxicity (Single Exposure) [Category 1]
Specific Target Organ Toxicity (Repeated Exposure) [Category 1]
Flammable Solids [Category 2]
Aquatic Hazard (Acute) [Category 1]
Aquatic Hazard (Long-Term) [Category 1]

Signal word: Danger!

Hazard Statement(s):
Flammable solid
Harmful if swallowed
Causes eye irritation
May cause an allergic skin reaction
Suspected of causing cancer
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects
Causes damage to: Blood Respiratory System Eye
Causes damage to organs through prolonged or repeated exposure: Blood Respiratory System Eye

Pictogram(s) or Symbol(s):

Precautionary Statement(s):
[Prevention]
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames and hot surfaces. – No smoking. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Do not breathe dust, fume, mist, vapors or spray. Avoid release to the environment. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, face protection.

[Response]
If swallowed: Call a poison center or doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. If exposed: Call a poison center or doctor. Collect spillage.

[Storage]
Store locked up.
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance/mixture:</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components:</td>
<td>Naphthalene Zone Refined (number of passes:23)</td>
</tr>
<tr>
<td>Percent:</td>
<td>&gt;99.8%(GC)</td>
</tr>
<tr>
<td>CAS RN:</td>
<td>91-20-3</td>
</tr>
<tr>
<td>Molecular Weight:</td>
<td>128.17</td>
</tr>
<tr>
<td>Chemical Formula:</td>
<td>C_{10}H_8</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Description of first aid measures:

**Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.

**Skin contact:** Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Call a POISON CENTER or doctor/physician.

**Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Call a POISON CENTER or doctor/physician.

**Ingestion:** Call a POISON CENTER or doctor/physician. Rinse mouth.

**Symptoms/effects:**

**Acute:** Redness.

**Delayed:** May cause skin sensitization. Possibly carcinogenic to humans.

**Indication of any immediate medical attention:** Not available.

**Notes to physician:** No data available

5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:** Dry chemical, foam, water spray, carbon dioxide.

**Hazardous combustion products:** These products include: Carbon oxides

**Other specific hazards:** Closed containers may explode from heat of a fire.

**Advice for firefighters:** Wear self-contained breathing apparatus if possible.

6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Keep people away from and upwind of spill/leak. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

**Environmental precautions:** Be careful not to let it flow into rivers, etc., since adverse effects on the environment are concerned.

**Methods and materials for containment and cleaning up:** Sweep dust to collect it into an airtight container, taking care not to disperse it. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

**Prevention of secondary hazards:** Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

**Precautions for safe handling:** Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent dispersion of dust. Keep away from heat/sparks/open flame/hot surfaces. -No smoking. Take measures to prevent the build up of electrostatic charge. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a local exhaust if dust or aerosol will be generated. Avoid all contact!

**Conditions for safe storage, including any incompatibilities**

**Storage conditions:** Keep container tightly closed. Store in a cool and dark place.

**Packaging material:** Comply with laws.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits:
- ACGIH TLV(TWA): 10 ppm (skin)
- OSHA PEL(TWA): 10 ppm

Appropriate engineering controls: Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust. Also install safety shower and eye bath.

Personal protective equipment
- Respiratory protection: Dust respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.
- Hand protection: Impervious gloves.
- Eye protection: Safety goggles. A face-shield, if the situation requires.
- Skin and body protection: Impervious protective clothing. Protective boots, if the situation requires.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C): Solid
Form: Crystal - Powder
Colour: White
Odour: Aromatic
Odour threshold: No data available
Odour threshold: No data available

Melting point/freezing point: 81°C (178°F)
Boiling point/range: 218°C (424°F)
Decomposition temperature: No data available
Relative density: No data available
Kinematic viscosity: 0.26mm²/s (80°C)
Log Pow: No data available

Flash point: No data available
Flammability(solid, gas): No data available
Autoignition temperature: 540°C (1004°F)

Flammability or explosive limits:
- Lower: 0.9%
- Upper: 5.9%

Solubility(ies):
- [Water] Insoluble
- [Other solvents] Very soluble: Ether
- Soluble: Alcohols, Benzene, Toluene

10. STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under proper conditions.
Possibility of hazardous reactions: No special reactivity has been reported.
Conditions to avoid: Spark, Open flame, Static discharge
Incompatible materials: Oxidizing agents
Hazardous decomposition products: Carbon dioxide, Carbon monoxide
11. TOXICOLOGICAL INFORMATION

RTECS Number: QJ0525000

Acute Toxicity:
- orl-rat LD50:490 mg/kg
- ihl-rat LC50>340 mg/m³/1H
- skin-rbt LD50:>20 g/kg
- ivn-mus LD50:100 mg/kg

Skin corrosion/irritation:
- skin-rbt 495 mg open MLD

Serious eye damage/irritation:
- eye-rbt 100 mg MLD

Respiratory or skin sensitization:
- No data available

Germ cell mutagenicity:
- cyt-ham-ovr 30 mg/L
- sce-ham-ovr 15 mg/L
- slt-dmg-orl 5 mmol/L

Carcinogenicity:
- ihl-rat TCLo:1575 mg/kg/105W-

  IARC: Group 2B (Possibly carcinogenic to humans).
  NTP: b (Reasonably anticipated to be carcinogens).
  OSHA: No data available

Reproductive toxicity:
- orl-rat TDLo:4500 mg/kg (6-15D preg)

Target organ(s):
- Causes damage to: Blood Respiratory System Eye
- Causes damage to organs through prolonged or repeated exposure: Blood Respiratory System Eye

12. ECOLOGICAL INFORMATION

Ecotoxicity:
- Fish: 48h LC50:9.0 ppm (Oryzias latipes)
- Crustacea: No data available
- Algae: No data available

Persistence / degradability:
- 2 % (by BOD), 0 % (by GC)

Bioaccumulative potential (BCF):
- 36.5 - 168 (conc. 0.15 ppm), 23 - 146 (conc. 0.15 ppm)

Mobility in soil
- Log Pow: 3.3
- Soil adsorption (Koc): No data available
- Henry's Law (PaM³/mol): 45

13. DISPOSAL CONSIDERATIONS

Disposal of product:
Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of container:
Dispose of as unused product. Do not re-use empty containers.

Other considerations:
Observe all federal, state and local regulations when disposing of the substance.
14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT (US)</th>
<th>IATA</th>
<th>IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number: UN1334</td>
<td>Proper Shipping Name: Naphthalene, refined</td>
<td>Class or Division: 4.1 Flammable solid</td>
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EmS number: F-A, S-G
Reportable Quantity: 100 Pounds (45.4 Kilograms)

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):
This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations
CERCLA Hazardous substance and Reportable Quantity:
SARA 313: Listed
SARA 302: Not Listed

State Regulations
State Right-to-Know
- Massachusetts Listed
- New Jersey Listed
- Pennsylvania Listed

California Proposition 65:
Listed

Other Information
NFPA Rating:
- Health: 3
- Flammability: 2
- Instability: 0
HMIS Classification:
- Health: 3
- Flammability: 2
- Physical: 0

International Inventories
Canada: DSL
EC-No: 202-049-5

16. OTHER INFORMATION

Revision date: 07/06/2018
Revision number: 1

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.