

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

1.1. Product identifier

Substance name : Octahydro- 1H-4,7-methanoindene, JP-10
 Product form : Substance
 CAS No : 6004-38-2
 Product code : JP-10

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

Use of the substance/mixture : Manufacture, Specialty

1.3. Details of the supplier of the safety data sheet

Dixie Chemical Company, Inc.
 10601 Bay Area Blvd
 Pasadena TX 77507
 Phone: 281-474-3271
 Email: msds@dixiechemical.com

1.4. Emergency telephone number

Emergency number : CHEMTREC® (800) 424-9300 Domestic, (703) 527-3887 International

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 3 H226
 Acute Tox. 4 (Oral) H302
 Skin Irrit. 2 H315
 Eye Irrit. 2A H319
 STOT SE 3 H335

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H226 - Flammable liquid and vapour
 H302 - Harmful if swallowed
 H315 - Causes skin irritation
 H319 - Causes serious eye irritation
 H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P210 - Keep away from hot surfaces, open flames, sparks. - No smoking
 P233 - Keep container tightly closed
 P240 - Ground/bond container and receiving equipment
 P241 - Use explosion-proof electrical, ventilating, lighting equipment
 P242 - Use only non-sparking tools
 P243 - Take precautionary measures against static discharge
 P261 - Avoid breathing dust, mist
 P264 - Wash hands, forearms and face thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P271 - Use only outdoors or in a well-ventilated area
 P280 - Wear eye protection, face protection, protective clothing, protective gloves
 P301+P312 - If swallowed: Call a doctor, a poison center if you feel unwell
 P302+P352 - If on skin: Wash with plenty of soap and water
 P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P312 - Call a doctor, a poison center if you feel unwell
 P321 - Specific treatment (see first aid instructions on this label)
 P330 - Rinse mouth

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P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use water, carbon dioxide (CO₂), alcohol resistant foam to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
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

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

| Name | Product identifier | % |
|-----------------------------------|--------------------|----------|
| 4,7-Methano-1H-indene, octahydro- | (CAS No) 6004-38-2 | 60 - 100 |

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

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

Symptoms/injuries : Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : Harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

Unsuitable extinguishing media : Water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour.

Explosion hazard : No data available.

Reactivity : No data available.

5.3. Advice for firefighters

Firefighting instructions : Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Do not dispose of fire-fighting water in the environment. Dispose of in accordance with relevant local regulations. Prevent human exposure to fire, fumes, smoke and products of combustion.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

Other information : Toxic vapors may be emitted upon thermal decomposition.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Notify authorities if product enters sewers or public waters. Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Vapors may be suppressed by water fog.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Wash spill area thoroughly with plenty of water.

6.4. Reference to other sections

See Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Do not allow air to enter the storage vessel since this consumes the anti-oxidant and significantly reduces its effectiveness. Air and moisture can be kept out by using a dry inert gas blanket such as nitrogen. Outflow tank breathing should be directed to an appropriate vapor abatement device. Keep away from ignition sources.

Special rules on packaging : Drum storage should comply with appropriate regulatory standards; consult NFPA 30 for storage of flammable material.

Packaging materials : Stainless steel or carbon steel atmospheric or pressure storage vessels following the appropriate NFPA and API guidelines for flammable material storage.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| 4,7-Methano-1H-indene, octahydro- (6004-38-2) | |
|---|----------------------|
| Remark (ACGIH) | OELs not established |
| Remark (OSHA) | OELs not established |

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment : Gloves. Protective goggles. Wear chemically impervious apron over labcoat and full coverage clothing.



Hand protection : Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl.

Eye protection : Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.

Skin and body protection : Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection : Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|---------------------------------|
| Physical state | : Liquid |
| Color | : Clear. Colorless. |
| Odor | : Kerosene. |
| Odor Threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : 186 °C (367 °F) |
| Flash point | : 54 °C (130 °F) PMCC, ASTM D93 |
| Auto-ignition temperature | : 240 °C (464 °F) |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : ≤ 5 mm Hg @ 20 °C (68 °F) |
| Relative vapour density at 20 °C | : 5 (air = 1) |
| Relative density | : 0.943 (water = 1) |
| Solubility | : No data available |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

High temperatures. Moisture.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|--|-------------------------------------|
| Acute toxicity | : Oral: Harmful if swallowed. |
| Skin corrosion/irritation | : Causes skin irritation. |
| Serious eye damage/irritation | : Causes serious eye irritation. |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : May cause respiratory irritation. |
| Specific target organ toxicity (repeated exposure) | : Not classified |
| Aspiration hazard | : Not classified |

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Symptoms/injuries after inhalation : May cause respiratory irritation.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No information available.

12.2. Persistence and degradability

Octahydro- 1H-4,7-methanoindene, JP-10 (6004-38-2)

Persistence and degradability : No data available.

12.3. Bioaccumulative potential

Octahydro- 1H-4,7-methanoindene, JP-10 (6004-38-2)

Bioaccumulative potential : No information available.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1993 Flammable liquids, n.o.s. (Contains: Octahydro-4,7-Methano-1H-indene), 3, III

UN-No.(DOT) : 1993

DOT NA no. : UN1993

Proper Shipping Name (DOT) : Flammable liquids, n.o.s.
Octahydro-4,7-Methano-1H-indene

Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : III - Minor Danger

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.

Additional information

Other information : No supplementary information available.

Transport by sea

UN-No. (IMDG) : 1993

Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, N.O.S. (Contains: Octahydro-4,7-Methano-1H-indene)

Class (IMDG) : 3 - Flammable liquids

Packing group (IMDG) : III - substances presenting low danger

Air transport

UN-No.(IATA) : 1993

Proper Shipping Name (IATA) : FLAMMABLE LIQUID, N.O.S. (Contains: Octahydro-4,7-Methano-1H-indene)

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Class (IATA) : 3 - Flammable Liquids
Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

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All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory or are exempt

| | |
|-------------------------------------|--|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard Fire hazard |
|-------------------------------------|--|

15.2. International regulations

All chemical substances in this product are listed on the Canadian Domestic Substances List (DSL) or are exempt
All chemical substances in this product are listed on the Chinese Chemical Inventory of Existing Chemical Substances (IECSC) or are exempt
All chemical substances in this product are listed on the European EINECS Inventory or the ELINCS list or are exempt
All chemical substances in this product are listed on the Japanese Existing and New Chemical Substances Inventory (ENCS) or are exempt
All chemical substances in this product are listed on the Taiwan Chemical Substance Inventory (TSCI) or are exempt
One or more of the chemical substances in this product is not listed on the Australian Inventory of Chemical Substances (AICS)
One or more of the chemical substances in this product is not listed on the Korean Existing Chemicals Inventory (KECI)
One or more of the chemical substances in this product is not listed on the Philippines Inventory of Chemicals and Chemical Substances (PICCS)
One or more of the chemical substances in this product is not listed on the New Zealand Inventory of Chemicals (NZIoC)

regulations

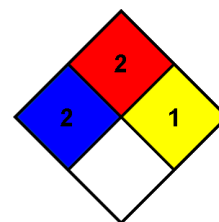
California Proposition 65

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Indication of changes : Revision 1.0: New SDS Created.
: 08/27/2015
Other information : Author: ANF.

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard : 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.
NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health : 2
Flammability : 2
Physical : 1
Personal Protection :

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product