**SIGMA-ALDRICH**

**Material Safety Data Sheet**

**Product name:** Petroleum Fraction

**Supplier:** Sigma-Aldrich

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**Preparation Information:** Sigma-Aldrich Corporation

**Preparation Address:** Product Safety - Americas Region

**Preparation Phone:** 1-800-521-8950

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### 2. HAZARDS IDENTIFICATION

**Emergency Overview**

- **OSHA Hazards:** Flammable liquid, Carcinogen, Target Organ Effect, Irritant, Teratogen, Mutagen

- **Target Organs:** Central nervous system, Kidney, Heart, Blood, Peripheral nervous system, Testes

- **GHS Classification:**
  - Flammable liquids (Category 2)
  - Acute toxicity. Dermal (Category 5)
  - Skin Irritation (Category 2)
  - Eye Irritation (Category 2A)
  - Genotoxicity (Category 1A)
  - Reproductive toxicity (Category 2)
  - Specific target organ toxicity - single exposure (Category 2)
  - Respiratory hazard (Category 1)
  - Acute aquatic toxicity (Category 3)

**GHS Label elements, including precautionary statements**

- **Pictogram:**
- **Signal word:** Danger

**Hazard statement(s):**

- **H225:** Highly flammable liquid and vapour.
- **H304:** May be fatal if swallowed and enters airways.
- **H313:** May be harmful in contact with skin.
- **H316:** Causes skin irritation.
- **H319:** Causes serious eye irritation.
- **H400:** May cause genetic defects.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha Refined, partly refined, or unrefined petroleum products by the distillation of natural gas. It consists of hydrocarbons hav</td>
<td>60 - 100 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Hexene</td>
<td>5 - 10 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>1 - 5 %</td>
</tr>
</tbody>
</table>

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### 4. FIRST AID MEASURES

**General advice:**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If Inhaled:**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

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**SIGMA-ALDRICH**

**Material Safety Data Sheet**

**Version:** 4.3

**Revision Date:** 08/07/2012

**Print Date:** 10/13/2013

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In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water, consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

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

Special protective equipment for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions - Carbon oxides

Further Information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Breathe vapors accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

6. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha Refined, partly refined, or unrefined petroleum products by the distillation of</td>
<td>8030-30-6</td>
<td>TWA 100 ppm</td>
<td>400 mg/m³</td>
<td>USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
</tbody>
</table>

TWA 100 ppm
400 mg/m³
USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

Remarks
The value in mg/m³ is approximate.

n-Hexane
110-54-3
TWA 100 ppm
400 mg/m³
USA, NIOSH Recommended Exposure Limits

Remarks
Central Nervous System impairment. Eye irritation. Peripheral neuropathy. Substances for which there is a Biological Exposure Index or Indices (see BEII section) Danger of cutaneous absorption

TWA 50 ppm
180 mg/m³
USA, NIOSH Recommended Exposure Limits

TWA 50 ppm
180 mg/m³
USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

TWA 50 ppm
180 mg/m³
USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

Benzene
71-43-2
TWA 60 ppm
180 mg/m³
USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

Remarks
Leukemia Substances for which there is a Biological Exposure Index or Indices (see BEII section) Confirmed human carcinogen Danger of cutaneous absorption

STEL
2.5 ppm
USA, ACGIH Threshold Limit Values (TLV)

Leukemia Substances for which there is a Biological Exposure Index or Indices (see BEII section) Confirmed human carcinogen Danger of cutaneous absorption

TWA 10 ppm
USA, Occupational Exposure Limits (OSHA) - Table Z2

237.40-1969

TWA 10 ppm
USA, Occupational Exposure Limits (OSHA) - Table Z2

237.40-1969

TWA 10 ppm
USA, Occupational Exposure Limits (OSHA) - Table Z2

237.40-1969

See 1910.1028. See Table Z-2 for the limits applicable in the operations or sectors excluded in 1910.1028. The final benzene standard in 1910.1028 applies to all occupational exposures to benzene except some subsegments of industry where exposures are consistently under the action level (i.e., distribution and sale of fuels, sealed containers and pipelines, coke production, oil and gas drilling and production, natural gas processing, and the percentage exclusion for liquid mixtures). For the exempted subsegments, the benzene limits in Table Z-2 apply.

TWA 0.1 ppm
USA, NIOSH Recommended Exposure Limits

Potential Occupational Carcinogen See Appendix A

ST 1 ppm
USA, NIOSH Recommended Exposure Limits

Potential Occupational Carcinogen See Appendix A
Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. Flame resistant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form clear, liquid
Colour colourless

Safety data
pH no data available
Melting point/freezing point no data available
Boiling point 65 - 100 °C (149 - 212 °F)
Flash point -43.4 °C (−45.9 °F) - closed cup
Ignition temperature 248 °C (475 °F)
Autoignition temperature no data available
Lower explosion limit 1.1 % (V)
Upper explosion limit 8 % (V)
Vapour pressure 590.0 hPa (442.5 mmHg) at 20 °C (68 °F)
1,975.4 hPa (1,481.7 mmHg) at 55 °C (131 °F)
Density 0.692 g/mL at 20 °C (68 °F)
Water solubility no data available
Partition coefficient: n-octanol/water no data available
Relative vapour density 2.5
Odour no data available
Odour Threshold no data available
Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Strong oxidizing agents

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50
LD50 Oral - rat > 5,000 mg/kg
Inhalation LC50
no data available
Dermal LD50
LD50 Dermal - rabbit > 3,000 mg/kg
Other Information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Skin irritation

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
Carcinogenicity - mouse - Skin
Tumorigenic/Carcinogenic by RTECS criteria. Skin and Appendages: Other: Tumors.
Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (Benzo(a))
NTP: Known to be human carcinogenic (Benzene)

Reproductive toxicity

no data available
Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Potential health effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. Causes respiratory tract irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.</td>
</tr>
<tr>
<td>Skin</td>
<td>May be harmful if absorbed through skin. Causes skin irritation.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Causes eye irritation.</td>
</tr>
</tbody>
</table>

Signs and Symptoms of Exposure

Aspiration or inhalation may cause chemical pneumonitis. Prolonged or repeated exposure to skin causes dermatitis, headache, dizziness, drowsiness, nausea, slowed reaction time, slurred speech, giddiness, unconsciousness.

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBTE and pVpB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

no data available

13. DISPOSAL CONSIDERATIONS

Product

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.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3295 Class: 3 Packing group: II

Proper shipping name: Hydrocarbons, liquid, n.o.s.

Reportable Quantity (RQ): 1000 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

IMO

UN number: 3295 Class: 3 Packing group: II

EMG-No: F-E, E-0

Proper shipping name: HYDROCARBONS, LIQUID, N.O.S.

Marine pollutant: No

IATA

UN number: 3295 Class: 3 Packing group: II

Proper shipping name: Hydrocarbons, liquid, n.o.s.

15. REGULATORY INFORMATION

OSHA Hazards

Flammable liquid, Corrosive, Target Organ Effect, Irritant, Teratogen, Mutagen

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels as established by SARA Title III, Section 313:

- n-Hexane
  - CAS-No: 110-54-3
  - Revision Date: 2007-07-01
- Benzene
  - CAS-No: 71-43-2
  - Revision Date: 2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

- n-Hexane
  - CAS-No: 110-54-3
  - Revision Date: 2007-07-01
- Benzene
  - CAS-No: 71-43-2
  - Revision Date: 2007-07-01
- Naphtha Refined, partly refined, or unrefined petroleum products by the distillation of natural gas. It consists of hydrocarbons hiv
  - CAS-No: 8050-30-6
  - Revision Date: 1992-04-24

Pennsylvania Right To Know Components

- n-Hexane
  - CAS-No: 110-54-3
  - Revision Date: 2007-07-01
- Benzene
  - CAS-No: 71-43-2
  - Revision Date: 2007-07-01
- Naphtha Refined, partly refined, or unrefined petroleum products by the distillation of hydrocarbons hiv
  - CAS-No: 8050-30-6
  - Revision Date: 1992-04-24

New Jersey Right To Know Components

- n-Hexane
  - CAS-No: 110-54-3
  - Revision Date: 2007-07-01
- Benzene
  - CAS-No: 71-43-2
  - Revision Date: 2007-07-01
- Naphtha Refined, partly refined, or unrefined petroleum products by the distillation of natural gas. It consists of hydrocarbons hiv
  - CAS-No: 8050-30-6
  - Revision Date: 1992-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

- Benzene
  - CAS-No: 71-43-2
  - Revision Date: 2009-02-01
16. OTHER INFORMATION

Further Information
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