

MATERIAL SAFETY DATA SHEET OF INDENE

1. Product Identification

Product name: Indene

Synonyms: 1H-Indene, Technical indene, Indonaphthene

CAS No.: 95-13-6

Chemical Formula: C₉H₈

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Suggestion and restriction for use: Used in synthetic resins, pesticides and as solvents. Mainly for the production of indene - coumarone resin. The material of Indene - coumarone resin is the heavy benzol and light oil fractions in the distillation cut 160-215 ° C, it contains 6% styrene, 4% coumarone, 40% indene, 5% 4 - methylstyrene and a small amount of xylene, toluene and other compounds, resin take 60-70% of the total amount of raw materials. Under the effect of catalyst such as Aluminum chloride, boron trifluoride etc. to polymerize fraction of the indene and coumarone with or without pressure, that is to generate indene - coumarone resin. Also can be pesticides intermediates or mixed with other liquid hydrocarbon to make paint solvents.

2. Composition/Information on Ingredients

CAS#	Chemical Name	Content	EINECS#
95-13-6	Indene	96.0% Min.	202-393-6

3. Hazards Identification

Emergency Overview

OSHA Hazards

Combustible Liquid, Target Organ Effect

Target Organs

Liver, Kidney, Lungs, Gallbladder.

GHS Label elements, including precautionary statements



Pictogram:

Signal word: Danger

Hazard statement(s)

H226 Flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

Precautionary statement(s)

P301 + P310 If swallowed: Immediately call a POISON CENTER or doctor/physician.

P331 Do not induce vomiting.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Potential Health Effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Ingestion: Aspiration hazard

4. First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes carefully with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.

Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

5. Fire Fighting Measures

Flammability of the Product: Combustible.

Auto-Ignition Temperature: No data available.

Flash Points: 58.0°C

Flammable Limits: No data available.

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances: Flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: No data available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: No data available.

Special Remarks on Explosion Hazards: No data available.

6. Accidental Release Measures

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

Storage:

Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Recommended storage temperature: 2 - 8 °C

8. Exposure Controls/Personal Protection

Components with workplace control parameters

Components	CAS No.	Value	Control parameters	Update	Basis
Indene	95-13-6	TWA	10ppm 48 mg/m ³	1994-09-01	USA. ACGIH Threshold Limit Values (TLV)
Indene	95-13-6	TWA	10ppm 45 mg/m ³	1989-03-01	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

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

For prolonged or repeated contact use protective gloves.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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

Color Slight yellow

Safety data

pH	No data available
Melting point	-5 - -3 °C (23 - 27 °F) - lit.
Boiling point	181 - 182 °C (358 - 360 °F) - lit.
Flash point	58 °C (136 °F) - closed cup
Ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Density	0.996 g/cm ³ at 25 °C (77 °F)
Solubility	Soluble in diethyl ether. Insoluble in cold water, hot water

10. Stability and Reactivity

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapors may form explosive mixture with air.

Conditions to avoid

May polymerize on exposure to light. heat, flames and sparks.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. Toxicological Information

Acute toxicity

LC50 Inhalation - rat - 14,000mg/m³

LD50 Inhalation- rat- 2300mg/kg

LD50 Inhalation- white mouse- 1800mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure (GHS)

No data available

Specific target organ toxicity - repeated exposure (GHS)

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

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS: NK8225000

12. Ecological Information

Toxicity

No data available

BOD5 and COD

No data available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation:

The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation

No data available

Other adverse effects

No data available

13. Disposal Considerations

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. 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: III

Proper shipping name: Hydrocarbons, liquid, N.O.S.

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN-Number: 3295 Class: 3 Packing group: III EMS-No: F-E, S-D

Proper shipping name: Hydrocarbons, liquid, N.O.S.

Marine pollutant: No

IATA

UN-Number: 3295 Class: 3 Packing group: III

Proper shipping name: Hydrocarbons, liquid, N.O.S.

15. Regulatory Information

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:**WHMIS (Canada):**

CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

DSCL (EEC):

R22- Harmful if swallowed. S24/25- Avoid contact with skin and eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

16. Other Information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Users should make their own investigations to determine the suitability of the information for their particular purposes. Aoertong Chemical shall not be held liable for any damage resulting from handling or from contact with the above product.