



Material Safety Data Sheet

INTERNATIONAL FLAVORS & FRAGRANCES

Product INDOLAROME

Print Date 02/10/2011

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : INDOLAROME
Sales ID : 00093560
MSDS Number : R00000224519
Product Use Description : Fragrance Ingredient

Company : International Flavours & Fragrances
(Hangzhou) Co., Ltd.
East of Xinanjiang Town
311600 Jiande City
Telephone : +8657164735488
Telefax : +8657164722092
Emergency telephone number : +65 6559 1335

SECTION 2 HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards : Moderate skin irritant
Moderate eye irritant

Carcinogenicity:

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.

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.

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.

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.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Component	CAS-No.
Indeno[1,2-d]-1,3-dioxin, 4,4a,5,9b-tetrahydro-, 4,5-Indeno-1,3-dioxan	18096-62-3

SECTION 4. FIRST AID MEASURES

First aid procedures

- Inhalation : Remove from exposure site to fresh air and keep at rest. Obtain medical advice.
- Skin contact : Remove contaminated clothes. Wash thoroughly with water (and soap). Contact physician if symptoms persist.
- Eye contact : Flush immediately with water for at least 15 minutes. Contact physician if symptoms persist.
- Ingestion : Rinse mouth with water and obtain medical advice.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

- Flash point : Remarks: not applicable

Fire fighting

- Suitable extinguishing media : Use water spray, dry chemical, carbon dioxide or appropriate foam.

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Protective equipment and precautions for firefighters

Special protective equipment for fire-fighters : Wear NIOSH approved self-contained breathing apparatus and full protective clothing when fighting fires involving chemicals. Use water spray to cool containers exposed to fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Avoid inhalation and contact with skin and eyes. A self-contained breathing apparatus is recommended in case of a major spill.

Environmental precautions : Keep away from drains, surface- and groundwater and soil.

Methods for containment / Methods for cleaning up : Clean up spillage promptly. Remove ignition sources. Provide adequate ventilation or exhaust. Avoid excessive inhalation of dust and vapours. Contain and recover free product. Dispose of according to the local regulations.

SECTION 7. HANDLING AND STORAGE

Handling : Avoid excessive inhalation of concentrated vapors. Follow good manufacturing practices for housekeeping and personal hygiene. Wash any exposed skin immediately after any chemical contact, before breaks and meals, and at the end of each work period. Contaminated clothing and shoes should be thoroughly cleaned before re-use.

If appropriate, procedures used during the handling of this material should also be used when cleaning equipment or removing residual chemicals from tanks or other containers, especially when steam or hot water is used, as this may increase vapor concentrations in the workplace air. Where chemicals are openly handled, access should be restricted to

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properly trained employees.
Keep all heated processes at the lowest necessary temperature in order to minimize emissions of volatile chemicals into the air.

Advice on protection against fire and explosion : Keep away from ignition sources and naked flame.

Requirements for storage areas and containers : Store in a cool, dry, ventilated area away from heat sources. Keep containers upright and tightly closed when not in use.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Engineering measures

Engineering measures : Where feasible, isolate mixing rooms and other areas where this material is used or openly handled. Maintain these areas under negative air pressure relative to the rest of the plant. Where feasible, use closed systems to transfer and process this material

Personal protective equipment

Eye protection : Use tight-fitting goggles, face shield or safety glasses with side shields if eye contact might occur.

Hand protection : Avoid skin contact. Use chemically resistant gloves.

Respiratory protection : Use local exhaust ventilation around open tanks and other open sources of potential exposures in order to avoid excessive inhalation, including places where this material is openly weighed or measured. In addition, use general dilution ventilation of the work area to eliminate or reduce possible worker exposures.
No respiratory protection is required during normal operations

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in a workplace where engineering controls such as adequate ventilation, etc. are sufficient.

If engineering controls and safe work practices are not sufficient, an approved, properly fitted respirator with organic vapor cartridges or canisters and particulate filters should be used:

- a) while engineering controls and appropriate safe work practices and/or procedures are being implemented; or
- b) during short term maintenance procedures when engineering controls are not in normal operation or are not sufficient; or
- c) if normal operational workplace vapor concentration in the air is increased due to heat ;
- d) during emergencies; or
- e) if engineering controls and operational practices are not sufficient to reduce airborne concentrations below an established occupational exposure limit.

Hygiene measures : To the extent deemed appropriate, implement pre-placement and regularly scheduled ascertainment of symptoms and spirometry testing of lung function for workers who are regularly exposed to this material.
To the extent deemed appropriate, use an experienced air sampling expert to identify and measure volatile chemicals that could be present in the workplace air to determine potential exposures and to ensure the continuing effectiveness of engineering controls and operational practices to minimize exposure.

Protective measures : In December 2003, the National Institute for Occupational Safety and Health ("NIOSH") published an Alert on preventing lung disease in workers who use or make flavorings [NIOSH Publication Number 2004-110].
In August 2004, the United States Flavor and Extract Manufacturers Association (FEMA) issued a report entitled "Respiratory Safety in the Flavor Manufacturing Workplace". Both of these reports provide recommendations for reducing

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employee exposure and for medical surveillance in the workplace. The recommendations in these reports are generally applicable to the use of any chemical in the workplace and you are strongly urged to review both of these reports.

The report published by FEMA also contains a list of "high priority" chemicals. If any of these chemicals are present in this product at a concentration $\geq 1.0\%$ due to an intentional addition by IFF, the chemical(s) will be identified in this safety data sheet.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : solid
Colour : white
Odour : conforms to standard

Safety data

Flash point : Note: not applicable
Freezing point : 96.80 - 107.60 °F (36.00 - 42.00 °C)
Vapour pressure : Note: not applicable

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Remarks: Direct sources of heat.
Chemical stability : Remarks: Presents no significant reactivity hazard, by itself or in contact with water. Avoid contact with strong acids, alkali or

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oxidizing agents.

Hazardous decomposition products : Note: Carbon monoxide and unidentified organic compounds may be formed during combustion.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : Acute toxicity estimate
Dose: 3,327 mg/kg
Method: Calculation method

Acute oral toxicity (Component) : Component: 18096-62-3
LD50 rat
Dose: 3,327 mg/kg

Skin irritation (Component) : Component: 18096-62-3
human
Result: No skin irritation
Method: repeated insult patch test

Eye irritation(Component) : Component: 18096-62-3
rabbit
Result: Mild eye irritation

Sensitisation (Component) : Component: 18096-62-3
human
Result: Did not cause sensitization on laboratory animals.
Test substance: 0.20%

Repeated dose toxicity(Component) : Component: 18096-62-3

SECTION 12. ECOLOGICAL INFORMATION

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SECTION 13. DISPOSAL CONSIDERATIONS

Contaminated packaging : Place material into sealed containers and dispose of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

IMDG Not dangerous goods

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Moderate skin irritant, Moderate eye irritant

SARA 311/312 Hazards : Acute Health Hazard

HMIS Classification : Health hazard: 1
Flammability: 0
Physical and chemical hazards: 0

SECTION 16. OTHER INFORMATION

Further information

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