



SAFETY DATA SHEET

INTERNATIONAL FLAVORS & FRAGRANCES

Product LINDENOL

Print Date 25.11.2009

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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : LINDENOL
Cust. Material : LINDENOL
Use of the Substance/Preparation : Ingredient used in Flavour and/or Fragrance preparations
Company : IFF (GREAT BRITAIN) LTD.
DUDDERY HILL
HAVERHILL
SuffolkCB9 8LG
E-mail address : sds@iff.com
Telephone : +441440715000
Emergency telephone : +44 1440 7 15000

2. HAZARDS IDENTIFICATION

Potential environmental effect : When spilled, can contaminate soil, ground- and surface water.

Risk advice to man and the environment

Symbol(s) : Xi Irritant
R-phrases) : R38 Irritating to skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name of the substance : terpineol
Chemical characterization : alicyclic alcohols
Molecular formula : C10 H18 O
Molecular Weight : 154,10 g/mol
CAS-No. : 8000-41-7
EINECS-No. : 232-268-1

4. FIRST AID MEASURES

General advice : Take Risk and Safety phrases (section 15) into account.
Inhalation : Remove from exposure site to fresh air and keep at rest. Obtain medical advice.

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- 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.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Carbondioxide, dry chemical, foam.
- Extinguishing media which shall not be used for safety reasons : Do not use a direct waterjet on burning material.

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 cleaning up : Clean up spillage promptly. Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Gross spillages should be contained by use of sand or inert powder and disposed of according to the local regulations.

7. HANDLING AND STORAGE

Handling

- Advice on safe 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

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workplace air. Where chemicals are openly handled, access should be restricted to 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.

Storage

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures

Advice : Where appropriate, use closed systems to transfer and process this material.
If appropriate, 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.

Personal protective equipment

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 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

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to reduce airborne concentrations below an established occupational exposure limit.

- Hand protection : Avoid skin contact. Use chemically resistant gloves.
- Eye protection : Use tight-fitting goggles, face shield or safety glasses with side shields if eye contact might occur.
- 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 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

- Physical state : liquid
- Colour : colorless to pale yellow
- Odour : Conforms to Standard

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Safety data

Flash point : 92,00 °C
Vapour pressure : 0,0666612 hPa
Note: Calculated
Relative density (20 °C) : 0,9340 - 0,9400

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50 (rat) = 4.300 mg/kg
Acute dermal toxicity : LD50 (rabbit) => 3.000 mg/kg
Skin irritation : Skin irritation (, rabbit, 24 h)
Sensitisation : Did not cause sensitization on laboratory animals. (,human, 12% in petrolatum)

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

13. DISPOSAL CONSIDERATIONS

Product : Dispose of according to local regulations. Avoid disposing into drainage systems and into the environment.
Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADR
Not dangerous goods

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IATA

Not dangerous goods

IMDG

Not dangerous goods

15. REGULATORY INFORMATION

Labelling according to EC Directives 67/548/EEC

Symbol(s) : Xi Irritant
R-phrases) : R38 Irritating to skin.
Water contaminating class : WGK 2 water endangering
(Germany) Classification according to Annex 3

16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3

R38 Irritating to skin.

Further information

According to Regulation (EC) No. 1907/2006 the information in this safety data sheet is based on the properties of the material known to IFF at the time the data sheet was issued. The safety data sheet is intended to provide information for a health and safety assessment of the material and the circumstances, under which it is packaged, stored or applied in the workplace. For such a safety assessment International Flavors & Fragrances holds no responsibility. This document is not intended for quality assurance purposes.

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