



SAFETY DATA SHEET

INTERNATIONAL FLAVORS & FRAGRANCES

Product VERDOL

Print Date 01.03.2012

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1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : VERDOL

Sales ID : 00222490

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

Use of the Substance/Mixture : Ingredient used in Flavour and/or Fragrance preparations

1.3 Details of the supplier of the safety data sheet

Company : IFF (NEDERLAND) BV
ZEVENHEUVELENWEG 60
5048 AN TILBURG

Telephone : +31134642211

Telefax : +31134636032

E-mail address : sds@iff.com

Responsible/issuing person

1.4 Emergency telephone number

+31 13 4642 211

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a dangerous substance according to GHS.

Classification (67/548/EEC, 1999/45/EC)

In accordance with EC directives or respective national laws, the product does not need to be classified nor labelled.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a dangerous substance according to GHS.

2.3 Other hazards

3. Composition/information on ingredients

3.1 Substances

Chemical name of the substance : 2-tert-butylcyclohexanol

Chemical characterization : alicyclic alcohols

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Molecular formula : C₁₀H₂₀O
Molecular Weight : 156,20 g/mol
CAS-No. : 13491-79-7
EINECS-No. : 236-806-6

Remarks :
For the full text of the R-phrases mentioned in this Section, see Section 16.

3.2 Mixtures

Not applicable, product is a substance.

4. First aid measures

4.1 Description of first aid measures

General advice : Take Risk and Safety phrases (section 15) into account.

If inhaled : Remove from exposure site to fresh air and keep at rest. Obtain medical advice.

In case of skin contact : Remove contaminated clothes. Wash thoroughly with water (and soap). Contact physician if symptoms persist.

In case of eye contact : Flush immediately with water for at least 15 minutes. Contact physician if symptoms persist.

If swallowed : Rinse mouth with water and obtain medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : Carbondioxide, dry chemical, foam.

Unsuitable extinguishing media : Do not use a direct waterjet on burning material.

5.2 Special hazards arising from the substance or mixture

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Specific hazards during fire fighting : Water may be ineffective.

5.3 Advice for firefighters

Further information : Standard procedure for chemical fires.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

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.

6.4 Reference to other sections

Prevent spreading over a wide area (e.g. by containment or oil barriers).

7. Handling and storage

7.1 Precautions for safe 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 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 : Keep away from ignition sources and naked flame.

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fire and explosion

7.2 Conditions for safe storage, including any incompatibilities

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.

7.3 Specific end uses

Specific use(s) : No information available.

8. Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

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 to reduce airborne concentrations below an established occupational

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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.

Environmental exposure controls

- General advice : Keep away from drains, surface- and groundwater and soil.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : solid
- Colour : white
- Odour : conforms to standard
- Odour Threshold : not determined
- Flash point : 77,78 °C
- Lower explosion limit : not determined
- Upper explosion limit : not determined
- Flammability (solid, gas) : not determined
- Oxidizing properties : not determined
- Autoignition temperature : not determined
- pH : not determined
- Melting point : 45,00 - 50,00 °C
- Boiling point : not determined
- Vapour pressure : not applicable
-
- Density : not determined
- Water solubility : not determined
- Solubility in other solvents : not determined
- Viscosity, dynamic : not determined
- Viscosity, kinematic : not determined
- Relative vapour density : not determined

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Evaporation rate : not determined

9.2 Other information

Refractive index : not determined

10. Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Note: Presents no significant reactivity hazard, by itself or in contact with water. Avoid contact with strong acids, alkali or oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid : Direct sources of heat.

10.5 Incompatible materials

Materials to avoid : Avoid contact with strong acids, alkali or oxidizing agents.

10.6 Hazardous decomposition products

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

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Skin corrosion/irritation

Skin irritation : No information available.
Skin irritation : Species: human
Result: No skin irritation
Method: repeated insult patch test

Serious eye damage/eye irritation

No information available.

Respiratory or skin sensitization

No information available.

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Sensitisation : Species: human
Result: Did not cause sensitization on laboratory animals.
Test substance: 1.2% in ethanol

Germ cell mutagenicity

No information available.

Carcinogenicity

No information available.

Reproductive toxicity

No information available.

Target Organ Systemic Toxicant - Single exposure

No information available.

Target Organ Systemic Toxicant - Repeated exposure

No information available.

Aspiration hazard

No information available.

12. Ecological information

12.1 Toxicity

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

12.5 Results of PBT and vPvB assessment

12.6 Other adverse effects

No information available.

13. Disposal considerations

13.1 Waste treatment methods

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

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Not dangerous goods

Environmentally hazardous : no

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user : No special precautions required.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Labelling # EU Directives 67/548/EEC or 1999/45/EC—

Additional Info : In accordance with EC directives or respective national laws, the product does not need to be classified nor labelled.

Water contaminating class (Germany) : WGK 2 water endangering
Classification according to appendix 3

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this product.

16. Other information

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

Full text of H-Statements referred to under sections 2 and 3.

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.

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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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