



## SAFETY DATA SHEET

# Florosol

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### Identification of the substance or mixture

<b>Product name</b>	: Florosol
<b>REACH Product name</b>	: tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)
<b>Product code</b>	: 32211
<b>Chemical name</b>	: tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)
<b>Synonyms</b>	: Tetrahydro-4-methyl-2-(2-methylpropyl)-2H-pyran-4-ol (cis isomer); Tetrahydro-4-methyl-2-(2-methylpropyl)-2H-pyran-4-ol (trans isomer)
<b>CAS number</b>	: 63500-71-0
<b>REACH Registration number</b>	: 01-0000015458-64-XXXX

#### Use of the substance/mixture

Industrial applications: Fragrance ingredient.

#### Restrictions on use

Not available.

<b>Supplier/Manufacturer</b>	: Innospec Widnes Limited Dans Road Widnes Cheshire WA8 0RF United Kingdom
<b>Telephone no.:</b>	: +44 (0)151 423 8000
<b>Fax no.</b>	: +44 (0)151 423 8127
<b>e-mail address of person responsible for this SDS</b>	: sdsinfo@innospecinc.com
<b>NON-emergency enquiries</b>	: corporatecommunications@innospecinc.com

#### Emergency telephone number (with hours of operation)

In Europe, Middle East, Africa, Asia Pacific and South America 24 hour / 7 day emergency response for Innospec products is provided by the NCEC CARECHEM 24 global network



The main regional centres are listed here in Section 1.

Other local contact numbers for specific language support in Asia Pacific are listed in Section 16

<b>Country information</b>	<b>Emergency telephone number</b>	<b>Location</b>
Europe ( all countries, all languages )	: +44 (0) 1235 239 670	London, UK
Middle East, Africa ( Arabic, French, English )	: +44 (0) 1235 239 671	Lebanon
Middle East, Africa ( French, Portuguese, English )	: +44 (0) 1235 239 670	London UK
Asia Pacific ( all countries except China )	: +65 3158 1074	Singapore
China	: +86 10 5100 3039	Beijing China
South America ( all countries )	: +1 215 207 0061	Philadelphia USA

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

In USA, Canada and North America, 24 hour / 7 day emergency response for Innospec products is provided by the CHEMTREC (R) Emergency Call Center based in the USA  
 toll-free telephone numbers USA : 800 424 9300 Canada, Puerto Rico, Virgin Islands : +1 800 424 9300  
 In case of difficulty using the toll-free number, or for ships at sea, please call +1 703 527 3887

See section 16.

## 2. HAZARDS IDENTIFICATION

The product is classified as dangerous according to Directive 67/548/EEC and its amendments.

### Classification according to Regulation (EC) 1907/2006 (REACH)

**Classification** : Xi; R36  
**Human health hazards** : Irritating to eyes.



**Risk phrases** : R36- Irritating to eyes.  
**Safety phrases** : S25- Avoid contact with eyes.  
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Contains** : - tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

### Classification and labeling according to Regulation (EC) 1272/2008 (CLP)

Classification and labeling have been determined according to Regulation (EC) 1272/2008 (including amendments) and take into account the intended product use.

**Signal word** : Warning  
**Classification** : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
**Hazard symbol or symbols** :



**Hazard statements** : Causes serious eye irritation.

### Precautionary statements

**Prevention** : Wear eye/face protection: Recommended: splash goggles.  
**Response** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Wash hands after handling.

**Contains** : - tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)  
**PBT** : No (Provisional)  
**vPvB** : No (Provisional)

See section 11 for more detailed information on health effects and symptoms.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Description of the product type** : Mono-constituent substance

Ingredient name	CAS number	%	EC number	Classification (according to REACH)
tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)	63500-71-0	60 - 100	01-0000015458-64-XXXX	Xi; R36 [1]
See section 16 for the full text of the R-phrases declared above				

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

[3] PBT-substance

[4] vPvB-substance

Occupational exposure limits, if available, are listed in section 8.

### 4. FIRST AID MEASURES

#### First-aid measures

- |                                   |  |
|-----------------------------------|--|
| <b>Inhalation</b>                 | : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.  |
| <b>Ingestion</b>                  | : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
| <b>Skin contact</b>               | : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.  |
| <b>Eye contact</b>                | : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.  |
| <b>Protection of first-aiders</b> | : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.   |
| <b>Notes to physician</b>         | : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |

See section 11 for more detailed information on health effects and symptoms.

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing media

- |   |   |
|---|---|
| <b>Suitable</b>                                       | : Use an extinguishing agent suitable for the surrounding fire.   |
| <b>Not suitable</b>                                   | : None known.   |
| <b>Special exposure hazards</b>                       | : In a fire or if heated, a pressure increase will occur and the container may burst. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
| <b>Hazardous thermal decomposition products</b>       | : Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide  |
| <b>Special protective equipment for fire-fighters</b> | : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.   |

### 6. ACCIDENTAL RELEASE MEASURES

- |                                  |   |
|----------------------------------|---|
| <b>Personal precautions</b>      | : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). |
| <b>Environmental precautions</b> | : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).   |

#### Methods for cleaning up

## 6. ACCIDENTAL RELEASE MEASURES

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7. HANDLING AND STORAGE

- Handling** Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
- Packaging materials**
- Recommended** : Use original container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure limit values

No exposure limit value known.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

### Exposure controls

- Occupational exposure controls** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter (Type A) (EN 141)
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 1-4 hours (breakthrough time): PVC

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: splash goggles
- Skin protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and chemical properties

- Physical state** : Liquid. [Clear.]
- Colour** : Colourless to light yellow. [Light]
- Odour** : Floral. [Strong]
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point** : -25°C (-13°F)
- Boiling point** : 223°C (433.4°F)
- Flash point** : Closed cup: 102°C (215.6°F) [Setaflash.]
- Evaporation rate** : Not available.
- Explosion limits** : Not available.
- Vapour pressure** : 0.005 kPa (0.04 mm Hg) (at 20°C)
- Vapour density** : Not available.
- Relative density** : 0.948 to 0.955 [20/4]
- Density** : 0.945 to 0.954 g/cm<sup>3</sup> [20°C (68°F)]
- Solubility** : Easily soluble in the following materials: methanol, acetone.  
Partially soluble in the following materials: cold water, hot water.
- Octanol/water partition coefficient** : 1.65
- Auto-ignition temperature** : 240°C (464°F)
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Explosive properties** : Not available.
- Oxidising properties** : Not available.
- Other information** : Not applicable.

## 10. STABILITY AND REACTIVITY

- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Materials to avoid** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. TOXICOLOGICAL INFORMATION

### Toxicokinetics

<b>Absorption</b>	: Not available.
<b>Distribution</b>	: Not available.
<b>Metabolism</b>	: Not available.
<b>Elimination</b>	: Not available.

### Potential acute health effects

<b>Inhalation</b>	: No known significant effects or critical hazards.
<b>Ingestion</b>	: No known significant effects or critical hazards.
<b>Skin contact</b>	: No known significant effects or critical hazards.
<b>Eye contact</b>	: Irritating to eyes.

### Acute toxicity

Product/ingredient name	Result	Species
tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)	LD50 Dermal	Rat >250 mg/kg -
	LD50 Oral	Rat >5000 mg/kg -

<b>Chronic effects</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.

### Over-exposure signs/symptoms

<b>Inhalation</b>	: No specific data.
<b>Ingestion</b>	: No specific data.
<b>Skin</b>	: No specific data.
<b>Eyes</b>	: Adverse symptoms may include the following: irritation watering redness

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	: Inherently biodegradable This product shows a low bioaccumulation potential.
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### Aquatic ecotoxicity

### Other ecological information

#### Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)	-	-	Inherent

#### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)	1.65	-	low

<b>Other adverse effects</b>	: No known significant effects or critical hazards.
<b>PBT</b>	: PBT: Specified
<b>vPvB</b>	: vPvB: Specified



### 13. DISPOSAL CONSIDERATIONS

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
- Hazardous waste** : Yes.

### 14. TRANSPORT INFORMATION

#### International transport regulations

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADR/RID Class	Not regulated.	-	-	-		-
ADN/ADNR Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA Class	Not regulated.	-	-	-		-

PG\* : Packing group

### 15. REGULATORY INFORMATION

- Chemical Safety Assessment** : Not available.
- Australia inventory (AICS)** : This material is listed or exempted.
- Canada inventory** : This material is listed or exempted.
- China inventory (IECSC)** : This material is listed or exempted.
- EU Inventory** : This material is listed in ELINCS.  
Please contact your supplier for information on the inventory status of this material.
- Japan inventory (ENCS)** : Not determined.
- Korea inventory (KECI)** : This material is listed or exempted.
- New Zealand Inventory of Chemicals (NZIoC)** : This material is listed or exempted.
- Philippines inventory (PICCS)** : This material is listed or exempted.
- United States inventory (TSCA 8b)** : This material is listed or exempted.
- Black List Chemicals** : Not listed
- Priority List Chemicals** : Not listed
- Integrated pollution prevention and control list (IPPC) - Air** : Not listed
- Integrated pollution prevention and control list (IPPC) - Water** : Not listed

#### International regulations

**Chemical Weapons Convention:** Not listed  
**List Schedule I Chemicals**

**Chemical Weapons Convention:** Not listed  
**List Schedule II Chemicals**

## 15. REGULATORY INFORMATION

**Chemical Weapons Convention:** Not listed  
**List Schedule III Chemicals**

## 16. OTHER INFORMATION

**Full text of R-phrases referred to in sections 2 and 3 - United Kingdom (UK)** : R36- Irritating to eyes.

**Full text of classifications referred to in sections 2 and 3 - United Kingdom (UK)** : Xi - Irritant

### History

**Date of printing** : 20/08/2010.

**Date of issue/ Date of revision** : 19/08/2010.

**Date of previous issue** : 10/08/2010.

**Version** : 1.09

Indicates information that has changed from previously issued version.

### **Emergency contact numbers for local language support in Asia Pacific region**

Country information	Languages supported	Telephone no.:	Location
Australia	English	+61 2 8014 4558	Australia
Bangladesh	Bengali, English	+65 3158 1200	Singapore
China	Mandarin, English	+86 10 5100 3039	Beijing China
India	Hindi, English	+65 3158 1198	Singapore
Indonesia (local toll free number)	Bahasa Indonesian, English	00780 3011 0293	Indonesia
Japan	Japanese, English	+81 3 4578 9341	Japan
Korea	Korean, English	+65 3158 1285	Singapore
Malaysia	Bahasa Malaysian, English	+60 3 6207 4347	Malaysia
New Zealand	English	+61 9929 1483	Australia
Pakistan	Urdu, English	+65 3158 1329	Singapore
Philippines	Tagalog, English	+65 3158 1203	Singapore
Sri Lanka	Sinhalese, English	+65 3158 1195	Singapore
Thailand (local toll free number)	Thai, English	001800 1 2066 6751	Thailand
Vietnam	Vietnamese, English	+65 3158 1255	Singapore

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

## Annex