

SAFETY DATA SHEET

COLOROBbia ITALIA S.P.A.		HTL--000037	
Date of printing	: 07.07.2023	Date of issue	: 29.06.2023
		Issue/Revision	: 5.0

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by
Commission Regulation (EU) 2020/878

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : HTL--000037
 Product code : 000000000010057905
 Product description : Not available.
 Product type : liquid
 Other means of identification : HTL--000037-H009

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

Identified uses : Third firing decoration in the glass/ceramics/porcelain sectors
 Third firing decoration in the glass/ceramics/porcelain sectors

1.3 Details of the supplier of the safety data sheet

COLOROBbia ITALIA S.P.A.
 Indirizzo via Pietramarina 53
 Località e Stato 50053 Sovigliana - Vinci (FI)
 Italia
 tel. +39 0571 7091
 fax +39 0571 709.850

e-mail address of person responsible for this SDS : QHSE@colorobbia.it

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : CAV - Ospedale Pediatrico Bambino Gesù - Roma - tel. +39 06 68593726
 Az. Ospedaliera Università Foggia - Foggia - tel. 800183459
 Az. Ospedaliera - A. Cardarelli- Napoli- tel. +39 081 7472870
 CAV - Policlinico Umberto I- Roma - tel. +39 06 49978000
 CAV - Policlinico A. Gemelli - Roma - tel. +39 06 3054343
 Az. Ospedaliera Careggi - U.O. Tossicologia Medica - Firenze - tel. +39 055 7947819
 CAV - Centro Nazionale di Informazione Tossicologica - Pavia - tel.

+39 0382 24444
Ospedale Niguarda Ca' Granda - Milano - tel. +39 02 66101029
Az. ospedaliera Papa Giovanni XXIII - Bergamo - tel. 800883300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]


Flam. Liq. 3, H226
Skin Irrit. 2, H315
Eye Dam. 1, H318
Skin Sens. 1, H317
Aquatic Acute 1, H400
Aquatic Chronic 1, H410

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

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

2.2 Label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements :
H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

General : P103 - Read carefully and follow all instructions. P102 - Keep out of reach of children. P101 - If medical advice is needed, have product container or label at hand.

Prevention : P280 - Wear protective gloves. P280 - Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 - Avoid release to the environment. P261 - Avoid breathing vapor. P264 - Wash thoroughly after handling.

Response : P391 - Collect spillage. P362 + P364 - Take off contaminated clothing and wash it before reuse. P302 - IF ON SKIN: P302 + P352 - Wash with plenty of water. P333 - If skin irritation or rash occurs: P333 + P313 - Get medical advice or attention. P305 - IF IN EYES: P305 + P351 + P338 - Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P305 + P310 - Immediately call a POISON CENTER or doctor.

Storage : Not applicable.

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Disposal	:	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	:	turpentine, oil rosin eugenol Eucalyptus globulus, ext. bornan-2-one dodecane-1-thiol linalool 4-methylpentan-2-one cineole (R)-p-mentha-1,8-diene
Supplemental label elements	:	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	Not applicable.
<u>Special packaging requirements</u>		
Containers to be fitted with child-resistant fastenings	:	Not applicable.
Tactile warning of danger	:	Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII	:	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Other hazards which do not result in classification	:	None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
turpentine, oil	EC : 232-350-7 CAS : 8006-64-2 Index: 650-002-00-6	>= 10 - <= 17	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	ATE [Oral] = 500 mg/kg ATE [Dermal] = 1.100 mg/kg ATE [Inhalation (vapours)] = 13,7 mg/l	[1]

cyclohexanol	EC : 203-630-6 CAS : 108-93-0 Index: 603-009-00-3	>= 10 - <= 17	Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Irrit. 2, H315 STOT SE 3, H335 (Respiratory tract irritation)	ATE [Oral] = 1.400 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1]
rosin	EC : 232-475-7 CAS : 8050-09-7 Index: 650-015-00-7	> 0 - <= 10	Met. Corr. 1, H290 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 100 M [Chronic] = 10	[1]
eugenol	EC : 202-589-1 CAS : 97-53-0	> 0 - <= 3	Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Sens. 1, H317	ATE [Oral] = 1.930 mg/kg	[1]
Eucalyptus globulus, ext.	EC : 283-406-2 CAS : 84625-32-1	> 0 - <= 3	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	-	[1]
bornan-2-one	EC : 200-945-0 CAS : 76-22-2	> 0 - < 1	Flam. Sol. 2, H228 Skin Sens. 1, H317 STOT RE 1, H372 Aquatic Chronic 4, H413	-	[1]
dodecane-1-thiol	EC : 203-984-1 CAS : 112-55-0	> 0 - < 1	Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 (Respiratory tract irritation)	-	[1]
linalool	EC : 201-134-4 CAS : 78-70-6 Index: 603-235-00-2	> 0 - < 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317	-	[1]
cyclohexane	EC : 203-806-2 CAS : 110-82-7 Index: 601-017-00-1	> 0 - < 1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 (Narcotic effects) Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1] [2]
4-methylpentan-2-one	EC : 203-550-1 CAS : 108-10-1 Index: 606-004-00-4	> 0 - < 0,3	Flam. Liq. 2, H225 Acute Tox. 4, H302 Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 Repr. 1B, H360 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE [Oral] = 500 mg/kg M [Acute] = 1 M [Chronic] = 1	[1] [2]
cineole	EC : 207-431-5 CAS : 470-82-6	> 0 - <= 0,3	Flam. Liq. 3, H226 Skin Sens. 1, H317	-	[1]

(R)-p-mentha-1,8-diene	EC : 227-813-5 CAS : 5989-27-5 Index: 601-096-00-2	> 0 - <= 0,3	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 3, H412	M [Acute] = 1	[1]
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See Section 16 for the full text of the H statements 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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Chemical burns must be treated promptly by a physician. 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.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the

rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- | | | |
|--------------|---|---|
| Eye contact | : | Adverse symptoms may include the following: pain, watering, redness |
| Inhalation | : | No specific data. |
| Skin contact | : | Adverse symptoms may include the following: pain or irritation, redness, blistering may occur |
| Ingestion | : | Adverse symptoms may include the following: stomach pains |

4.3 Indication of any immediate medical attention and special treatment needed

- | | | |
|---------------------|---|---|
| Notes to physician | : | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | : | No specific treatment. |

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | | |
|--------------------------------|---|--|
| Suitable extinguishing media | : | Use dry chemical, CO ₂ , water spray (fog) or foam. |
| Unsuitable extinguishing media | : | Do not use water jet. |

5.2 Special hazards arising from the substance or mixture

- | | | |
|---------------------------------------|---|--|
| Hazards from the substance or mixture | : | Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. |
| Hazardous combustion products | : | Decomposition products may include the following materials: carbon dioxide, carbon monoxide Decomposition products may include the following materials: carbon dioxide, carbon monoxide |

5.3 Advice for firefighters

- | | | |
|--|---|---|
| Special protective actions for fire-fighters | : | 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. |
| Special protective equipment for fire-fighters | : | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : 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 spilled material. Shut off all ignition sources. No flames, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilled 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. Approach 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless

adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : 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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. 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. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c	5.000 t	50.000 t
E1	100 t	200 t

7.3 Specific end use(s)

Recommendations : Not available.
Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
cyclohexane	EU OEL (2006-02-01). TWA 700 mg/m ³ 200 ppm Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (2008-02-26). TWA 350 mg/m ³ 100 ppm

4-methylpentan-2-one	EU OEL (2000-06-01). TWA 83 mg/m ³ 20 ppm STEL 208 mg/m ³ 50 ppm Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (2004-03-01). TWA 83 mg/m ³ 20 ppm STEL 208 mg/m ³ 50 ppm
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Biological exposure indices

No exposure indices known.

Recommended monitoring procedures

- : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
turpentine, oil	DNEL	Short term Dermal	1,6 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Oral	0,11 mg/kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	51,6 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	10,3 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	3,9 mg/m ³	Workers	Local
	DNEL	Long term Dermal	3,17 mg/cm ²	Workers	Local
	DNEL	Short term Oral	0,59 mg/kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	0,12 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	9,51 mg/cm ²	Workers	Local
	DNEL	Long term Inhalation	0,78 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1,17 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0,018 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	0,417 mg/kg bw/day	General population	Systemic
cyclohexanol	DNEL	Long term Dermal	1,43 mg/kg bw/day	Workers	Systemic

	DNEL	Long term Dermal	0,716 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	0,716 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	40,3 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	10 mg/m ³	General population	Systemic
rosin	DNEL	Long term Oral	1,0655 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	10 mg/m ³	Workers	Local
	DNEL	Long term Dermal	2,131 mg/kg bw/day	Workers	Systemic
eugenol	DNEL	Long term Oral	3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	21,2 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	5,22 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	6 mg/kg bw/day	Workers	Systemic
Eucalyptus globulus, ext.	DNEL	Long term Inhalation	3,52 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	0,5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	0,5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0,87 mg/m ³	General population	Systemic
bornan-2-one	DNEL	Long term Inhalation	4,3478 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	17,6316 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	10 mg/kg bw/day	Workers	Systemic
linalool	DNEL	Long term Dermal	3 mg/cm ²	Workers	Local
cyclohexane	DNEL	Long term Oral	59,4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	2016 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	1400 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	1400 mg/m ³	Workers	Local
	DNEL	Long term Dermal	1186 mg/kg bw/day	General population	Systemic
	DNEL	Long term	700 mg/m ³	Workers	Systemic

		Inhalation			
	DNEL	Long term Inhalation	700 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	412 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	412 mg/m ³	General population	Local
	DNEL	Long term Inhalation	206 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	206 mg/m ³	General population	Local
4-methylpentan-2-one	DNEL	Long term Oral	4,2 mg/kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	208 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	208 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	83 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	83 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	14,7 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	14,7 mg/m ³	General population	Local
	DNEL	Long term Dermal	11,8 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	155,2 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	155,2 mg/m ³	General population	Local
cineole	DNEL	Long term Dermal	1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	600 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	7,05 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	2 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1,74 mg/m ³	General population	Systemic
(R)-p-mentha-1,8-diene	DNEL	Long term Inhalation	16,6 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	9,5 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	4,8 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	4,8 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	66,7 mg/m ³	Workers	Systemic

PNECs

No PNECs available.

8.2 Exposure controls

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- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Individual protection measures**
- 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : It is recommended to wear a hooded visor or protective visor combined with airtight goggles (ref. Standard EN 166).
- Skin protection**
- Hand protection** : Protect hands with category III work gloves (ref. Standard EN 374). For the final choice of the material of the work gloves it is necessary to consider: compatibility, degradation, breakage time and permeation. In the case of preparations, the resistance of work gloves to chemical agents must be checked before use as it is not foreseeable. Gloves have a wear time that depends on the duration and method of use.
- Body 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. In case of exceeding the threshold value (e.g. TLV-TWA) of the substance or of one or more of the substances present in the product, it is recommended to wear a mask with type AX filter whose limit of use will be defined by the manufacturer (ref. . standard EN 14387). If there are gases or vapors of a different nature and / or gases or vapors with particles (aerosols, fumes, mists, etc.), combined filters must be provided. The use of respiratory protection means is necessary in case the technical measures adopted are not sufficient to limit the exposure of the worker to the threshold values taken into consideration. The protection offered by the masks is however limited. In the event that the substance in question is odorless or its olfactory threshold is higher than the relative TLV-TWA and in the event of an emergency, wear an open-circuit compressed air breathing apparatus (ref. Standard EN 137) or a self-contained breathing apparatus. outdoor air (ref. EN 138 standard). For the correct choice of the respiratory protection device, refer to the EN 529 standard.
- 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.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: liquid [liquid]
Color	: Brown.
Odor	: Aromatic.
Odor threshold	: Not available.
Melting point/freezing point	: Not available.
Initial boiling point and boiling range	: > 100 °C (> 212 °F)
Flammability	: Not available.
Lower and upper explosion limit	: Lower: Not available. Upper: Not available.
Flash point	:
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
pH	: Product is non-polar/aprotic.
Viscosity	: Dynamic : Not available. Kinematic : Not available.
Solubility in water	: insoluble
Partition coefficient: n-octanol/water	: Not applicable.
Vapor pressure	:
Relative density	: Not available.
Vapor density	: Not applicable.
Explosive properties	: Not available.
Oxidizing properties	: Not available.

Particle characteristics

Median particle size	: Not applicable.
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SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- 10.5 Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
turpentine, oil				
	LD50 Oral	Rat	3.956 mg/kg	-
	LC50 Inhalation Vapor	Rat	19,9 mg/l	1 h
	LC50 Inhalation Vapor	Rat	13,7 mg/l	4 h
cyclohexanol				
	LD50 Oral	Rat	1.400 mg/kg	-
rosin				
	LD50 Oral	Rat	7.600 mg/kg	-
eugenol				
	LD50 Oral	Rat	1.930 mg/kg	-
linalool				
	LD50 Oral	Rat	2.790 mg/kg	-
	LD50 Dermal	Rabbit	5.610 mg/kg	-
	LD50 Dermal	Rat	5.610 mg/kg	-
cyclohexane				
	LD50 Oral	Rat	5.000 mg/kg	-
4-methylpentan-2-one				
	LD50 Oral	Rat	2.080 mg/kg	-
cineole				
	LD50 Oral	Rat	2.480 mg/kg	-
(R)-p-mentha-1,8-diene				
	LD50 Oral	Rat	4.400 mg/kg	-
	LD50 Dermal	Rabbit	5.000 mg/kg	-

Conclusion/Summary : Not available.

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Acute toxicity estimates

Product/ingredient name	Oral	Dermal	Inhalation (gases)	Inhalation (vapors)	Inhalation (dusts and mists)
HTL--000037-H009	3368,7 mg/kg	10471,6 mg/kg	N/A	58,4 mg/l	N/A
turpentine, oil	500 mg/kg	1100 mg/kg	N/A	13,7 mg/l	N/A
cyclohexanol	1400 mg/kg	N/A	N/A	11 mg/l	N/A
rosin	7600 mg/kg	N/A	N/A	N/A	N/A
eugenol	1930 mg/kg	N/A	N/A	N/A	N/A
linalool	2790 mg/kg	5610 mg/kg	N/A	N/A	N/A
cyclohexane	5000 mg/kg	N/A	N/A	N/A	N/A
4-methylpentan-2-one	500 mg/kg	N/A	N/A	N/A	N/A
cineole	2480 mg/kg	N/A	N/A	N/A	N/A
(R)-p-mentha-1,8-diene	4400 mg/kg	5000 mg/kg	N/A	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
turpentine, oil	Skin - Severe irritant	Rabbit	-		-
	Skin - Severe irritant	Human	-		-
cyclohexanol	Skin - Moderate irritant	Rabbit	-	24 hrs	-
	Skin - Mild irritant	Rabbit	-	24 hrs	-
	Eyes - Moderate irritant	Rabbit	-	24 hrs	-
	Eyes - Mild irritant	Rabbit	-	24 hrs	-
	Eyes - Moderate irritant	Rabbit	-		-
eugenol	Skin - Moderate irritant	Man	-	48 hrs	-
	Skin - Severe irritant	Rabbit	-	24 hrs	-
	Skin - Mild irritant	Pig	-	48 hrs	-
	Skin - Moderate irritant	Guinea pig	-	24 hrs	-
	Skin - Mild irritant	Human	-	48 hrs	-
linalool	Eyes - Moderate	Rabbit	-	1 hrs	-

	irritant				
	Skin - Mild irritant	Man	-	48 hrs	-
	Skin - Mild irritant	Rabbit	-	24 hrs	-
	Skin - Severe irritant	Rabbit	-	24 hrs	-
	Eyes - Moderate irritant	Rabbit	-		-
	Skin - Moderate irritant	Guinea pig	-	24 hrs	-
	Skin - Mild irritant	Human	-	72 hrs	-
4-methylpentan-2-one	Eyes - Moderate irritant	Rabbit	-	24 hrs	-
	Skin - Mild irritant	Rabbit	-	24 hrs	-
	Eyes - Severe irritant	Rabbit	-		-
(R)-p-mentha-1,8-diene	Skin - Mild irritant	Rabbit	-	24 hrs	-

Conclusion/Summary

Skin : Not available.
Eyes : Not available.
Respiratory : Not available.

Sensitization

Conclusion/Summary

Skin : Not available.
Respiratory : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
cyclohexanol	Category 3	-	Respiratory tract irritation
dodecane-1-thiol	Category 3	-	Respiratory tract irritation

cyclohexane	Category 3	-	Narcotic effects
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Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
bornan-2-one	Category 1	-	-

Aspiration hazard

Product/ingredient name	Result
turpentine, oil	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1
(R)-p-mentha-1,8-diene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: pain, watering, redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following: pain or irritation, redness, blistering may occur
Ingestion : Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary : Not available.
General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.

11.2. Information on other hazards

11.2.1 Endocrine disrupting properties : Not available.
11.2.2 Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
cyclohexanol			
	Acute LC50 704 mg/l Fresh water	Fish - Pimephales promelas	96 h
eugenol			
	Acute LC50 24 mg/l Fresh water	Fish - Pimephales promelas	96 h
linalool			
	Acute LC50 28,8 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 h
	Acute EC50 36,7 mg/l Fresh water	Daphnia - Daphnia magna	48 h
cyclohexane			
	Acute LC50 4,53 mg/l Fresh water	Fish - Pimephales promelas	96 h
4-methylpentan-2-one			
	Acute LC50 505 mg/l Fresh water	Fish - Pimephales promelas	96 h
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas	33 d
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 d
cineole			
	Acute LC50 102 mg/l Fresh water	Fish - Pimephales promelas	96 h
(R)-p-mentha-1,8-diene			
	Acute EC50 0,688 mg/l Fresh water	Fish - Pimephales promelas	96 h
	Acute EC50 0,421 mg/l Fresh water	Daphnia - Daphnia magna	48 h

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
cyclohexanol	1,21,25	-	low
rosin	1,9 - 7,7	-	high
eugenol	2,27	-	low
bornan-2-one	2,38	-	low
dodecane-1-thiol	6,5	-	high
linalool	2,84	-	low
cyclohexane	3,44	167,00	low

4-methylpentan-2-one	1,9	-	low
cineole	2,74	-	low
(R)-p-mentha-1,8-diene	4,57	-	high

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties : Not available.

12.7 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.




Packaging

- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	European waste catalogue (EWC)
	15 01 10* packaging containing residues of or contaminated by hazardous substances

- Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN1993	UN1993	UN1993
14.2 UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (turpentine, oil)	FLAMMABLE LIQUID, N.O.S. (turpentine, oil)	Flammable liquid, n.o.s. (turpentine, oil)
14.3 Transport hazard class(es)	3 	3 	3 
14.4 Packing group	III	III	III
14.5. Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

ADR/RID	: The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. <u>Special provisions</u> 274, 601 <u>Tunnel code</u> (E)
ADN	: The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
IMDG	: The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <u>Special provisions</u> 223, 274, 955
IATA	: The environmentally hazardous substance mark may appear if required by other transportation regulations. <u>Special provisions</u> A3

14.6 Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Version: 5.0

Date of issue/Date of revision: 29.06.2023

Date of previous issue: 27.06.2023

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Ozone depleting substances (1005/2009/EU)

None of the components are listed.

Prior Informed Consent (PIC) (649/2012/EU)

None of the components are listed.

Persistent Organic Pollutants

None of the components are listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category
P5c
E1

National regulations

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Chemical Weapons Convention List Schedule I Chemicals

None of the components are listed.

Chemical Weapons Convention List Schedule II Chemicals

None of the components are listed.

Chemical Weapons Convention List Schedule III Chemicals

None of the components are listed.

Montreal Protocol

None of the components are listed.

Stockholm Convention on Persistent Organic Pollutants

Annex A - Elimination - Production

None of the components are listed.

Annex A - Elimination - Use

None of the components are listed.

Version: 5.0 *Date of issue/Date of revision:* 29.06.2023

Date of previous issue: 27.06.2023

Annex B - Restriction - Production

None of the components are listed.

Annex B - Restriction - Use

None of the components are listed.

Annex C - Unintentional - Production

None of the components are listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Rotterdam Convention on Prior Informed Consent (PIC) - Industrial

None of the components are listed.

Rotterdam Convention on Prior Informed Consent (PIC) - Pesticide

None of the components are listed.

Rotterdam Convention on Prior Informed Consent (PIC) -Severely hazardous pesticide

None of the components are listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Heavy metals - Annex 1

None of the components are listed.

POPs - Annex 1 - Production

None of the components are listed.

POPs - Annex 1 - Use

None of the components are listed.

POPs - Annex 2

None of the components are listed.

POPs - Annex 3

None of the components are listed.

Inventory list

Australia	:	Not determined.
Canada	:	Not determined.
China	:	Not determined.
Eurasian Economic Union	:	Russian Federation inventory: Not determined.
Japan	:	Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.
New Zealand	:	Not determined.
Philippines	:	Not determined.
Republic of Korea	:	Not determined.
Taiwan	:	Not determined.
Thailand	:	Not determined.
Turkey	:	Not determined.
United States	:	At least one component is inactive.
Viet Nam	:	Not determined.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety

Assessments are still required.

SECTION 16: Other information

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- SGG = Segregation Group
- vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 1, H410	Calculation method

Full text of abbreviated H statements

H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H228	Flammable solid.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Full text of classifications [CLP/GHS]

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	AQUATIC HAZARD (ACUTE) - Category 1
Aquatic Chronic 1	AQUATIC HAZARD (LONG-TERM) - Category 1
Aquatic Chronic 2	AQUATIC HAZARD (LONG-TERM) - Category 2
Aquatic Chronic 3	AQUATIC HAZARD (LONG-TERM) - Category 3
Aquatic Chronic 4	AQUATIC HAZARD (LONG-TERM) - Category 4
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Flam. Sol. 2	FLAMMABLE SOLIDS - Category 2
Met. Corr. 1	CORROSIVE TO METALS - Category 1
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Repr. 1B	TOXIC TO REPRODUCTION - Category 1B
Resp. Sens. 1	RESPIRATORY SENSITIZATION - Category 1
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITIZATION - Category 1
Skin Sens. 1B	SKIN SENSITIZATION - Category 1B
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

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