SAFETY DATA SHEET

HARTÖL 6448-15 - All variants

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

1.1 Product identifier

Product name : HARTÖL 6448-15 - All variants

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

Product use : Paint.

1.3 Details of the supplier of the safety data sheet

Teknos Group Oy, Takkatie 3, FI-00370 HELSINKI, FINLAND. Tel. +358 9 506 091.

e-mail address of person responsible for this SDS : Prod-safe@teknos.com

National contact

Teknos Group Oy, Takkatie 3, FI-00370 HELSINKI, FINLAND. Tel. +358 9 506 091.

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : In an emergency, call 112

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]

Repr. 1B, H360FD

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 : H360FD - May damage fertility. May damage the unborn child.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : Contains: 2-ethylhexanoic acid, zirconium salt and 2-ethylhexanoic acid, manganese salt

Supplemental label elements : Contains Cobalt bis(2-ethylhexanoate). May produce an allergic reaction.

SECTION 2: Hazards identification

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Restricted to professional users.

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
White mineral oil (petroleum)	EC: 232-455-8 CAS: 8042-47-5	≤10	Asp. Tox. 1, H304	-	[1]
Naphtha (petroleum), hydrotreated light	REACH #: 01-2119475515-33 EC: 265-151-9 CAS: 64742-49-0 Index: 649-328-00-1	≤10	Flam. Liq. 3, H226 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	-	[1]
2-ethylhexanoic acid, zirconium salt	REACH #: 01-2119979088-21 EC: 245-018-1 CAS: 22464-99-9 Index: 607-230-00-6	<0.3	Repr. 1B, H360D	-	[1]
2-ethylhexanoic acid, manganese salt	REACH #: 01-2119979087-23 EC: 240-085-3 CAS: 15956-58-8 Index: 607-230-00-6	<0.3	Eye Irrit. 2, H319 Repr. 1B, H360D STOT RE 2, H373 Aquatic Chronic 2, H411	-	[1] [2]
Cobalt bis (2-ethylhexanoate)	REACH #: 01-2119524678-29 EC: 205-250-6 CAS: 136-52-7 Index: 607-230-00-6	<0.1	Eye Irrit. 2, H319 Skin Sens. 1A, H317 Repr. 1B, H360FD Aquatic Acute 1, H400 Aquatic Chronic 3, H412 **See Section 16 for the full text of the H statements declared above.**	M [Acute] = 1	[1]

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 : 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 if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 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 : Flush contaminated skin with plenty of 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. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : 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. Get medical attention. 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 : No specific data.

Inhalation : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

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 an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products : 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.

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 spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised 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 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).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. 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.

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). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not

SECTION 7: Handling and storage

in use. 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 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. 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. See Section 10 for incompatible materials before handling or use.

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
White mineral oil (petroleum)	**Regulation on Limit Values - MAC (Austria, 4/2021) [Mineralöle]** Carc C.
Naphtha (petroleum), hydrotreated light	**Regulation on Limit Values - MAC (Austria, 4/2021) [Hexan (alle Isomeren außer n-Hexan und Methylcyclopentan)]** PEAK 15 minutes: 800 ppm 4 times per shift. TWA 8 hours: 715 mg/m³. TWA 8 hours: 200 ppm. PEAK 15 minutes: 2860 mg/m³ 4 times per shift.
2-ethylhexanoic acid, zirconium salt	**Regulation on Limit Values - MAC (Austria, 4/2021) [Zirkonverbindungen]** TWA 8 hours: 5 mg/m³ (measured as Zr). Form: Inhalable fraction.
2-ethylhexanoic acid, manganese salt	**Regulation on Limit Values - MAC (Austria, 4/2021) [Mangan und seine anorganischen Verbindungen einschließlich Trimangantetroxid]** TWA 8 hours: 0.2 mg/m³ (measured as Mn). Form: Inhalable fraction. PEAK 15 minutes: 1.6 mg/m³ (measured as Mn), 4 times per shift. Form: Inhalable fraction. PEAK 15 minutes: 0.16 mg/m³ (measured as Mn), 4 times per shift. Form: Respirable fraction. TWA 8 hours: 0.05 mg/m³ (measured as Mn). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**Regulation on Limit Values - Technical Guidance Values (Austria, 4/2021) [Cobalt und seine Verbindungen (Cobalt als Cobaltmetall, Cobaltoxid und Cobaltsulfid, Staub von Cobaltlegierungen), im übrigen.]** Absorbed through skin , Inhalation sensitiser , Skin sensitiser. TWA 8 hours: 0.1 mg/m³ (measured as Co). Form: Inhalable fraction. PEAK 15 minutes: 0.4 mg/m³ (measured as Co), 4 times per shift. Form: Inhalable fraction. **Regulation on Limit Values - Technical Guidance Values**

	(Austria, 4/2021) [Cobalt und seine Verbindungen (Cobalt als Cobaltmetall, Cobaltoxid und Cobaltsulfid, Staub von Cobaltlegierungen). Herstellung von Cobaltpulver und Katalysatoren, Hartmetall- und Magnetherstellung.] Absorbed through skin , Inhalation sensitiser , Skin sensitiser. TWA 8 hours: 0.5 mg/m³ (measured as Co). Form: Inhalable fraction. PEAK 15 minutes: 2 mg/m³ (measured as Co), 4 times per shift. Form: Inhalable fraction. **Regulation on Limit Values - MAC (Austria, 4/2021) [Cobalt und seine Verbindungen (Cobalt als Cobaltmetall, Cobaltoxid, Cobaltsulfid und Cobaltsulfat, Staub von Cobaltlegierungen)]** Carc A2.
White mineral oil (petroleum)	**Limit values (Belgium, 12/2023) [Olie]** TWA 8 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist.
Naphtha (petroleum), hydrotreated light	**Limit values (Belgium, 12/2023) [Hexaan (andere isomeren dan n-hexaan)]** TWA 8 hours: 500 ppm. TWA 8 hours: 1786 mg/m³. STEL 15 minutes: 1000 ppm. STEL 15 minutes: 3551 mg/m³.
Polyethylene wax	**Limit values (Belgium, 12/2023)** TWA 8 hours: 2 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Limit values (Belgium, 12/2023) [Zirkonium (en verbindingen)]** TWA 8 hours: 5 mg/m³ (as Zr). STEL 15 minutes: 10 mg/m³ (as Zr).
2-ethylhexanoic acid, manganese salt	**Limit values (Belgium, 12/2023) [Mangaan, en -verbindingen]** TWA 8 hours: 0.2 mg/m³ (as Mn). **Limit values (Belgium, 12/2023) [Mangaan, en anorganische verbindingen]** TWA 8 hours: 0.05 mg/m³ (as Mn). Form: Respirable fraction.
White mineral oil (petroleum)	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) [Oils – mineral, petroleum]** Limit value 8 hours: 5 mg/m³.
Ethene, homopolymer	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** Limit value 8 hours: 10 mg/m³. Form: Dust.
2-ethylhexanoic acid, manganese salt	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) [Manganese oxide and inorganic compounds]** Limit value 8 hours: 0.05 mg/m³ (as Manganese). Form: Respirable fraction. Limit value 8 hours: 0.2 mg/m³ (as Manganese). Form: Inhalable fraction.
Cobalt bis(2-ethylhexanoate)	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) [Cobalt and inorganic compounds]** Limit value 8 hours: 0.1 mg/m³ (as cobalt).
Polyethylene wax	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)** STELV 15 minutes: 6 mg/m³. Form: Fume. ELV 8 hours: 2 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) [cirkonijevi spojevi]** STELV 15 minutes: 10 mg/m³ (as Zr). ELV 8 hours: 5 mg/m³ (as Zr).
2-ethylhexanoic acid, manganese salt	**Ordinance on the protection of workers from exposure to**

SECTION 8: Exposure controls/personal protection

	hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) [mangan i anorganski spojevi mangana] ELV 8 hours: 0.05 mg/m³ (as Mn). Form: respiratory dust, a fraction that can reach the lungs by inhalation and inhalable fraction. ELV 8 hours: 0.2 mg/m³ (as Mn). Form: total dust, inhalable particles and the fraction that can reach the lungs by inhalation.
Cobalt bis(2-ethylhexanoate)	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) [kobalt i spojevi]** Skin sensitiser , Inhalation sensitiser. ELV 8 hours: 0.1 mg/m³ (as Co).
2-ethylhexanoic acid, manganese salt	**Department of labour inspection (Cyprus, 7/2021) [Μαγγάνιο και ανόργανες ενώσεις του μαγγανίου]** TWA 8 hours: 0.05 mg/m³ (as Mn). Form: Respirable fraction. TWA 8 hours: 0.2 mg/m³ (as Mn). Form: Inhalable fraction..
White mineral oil (petroleum)	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [oleje minerální]** TWA 8 hours: 5 mg/m³. Form: Aerosol. STEL 15 minutes: 10 mg/m³. Form: Aerosol.
Naphtha (petroleum), hydrotreated light	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [hexan isomery]** TWA 8 hours: 1000 mg/m³. TWA 8 hours: 279 ppm. STEL 15 minutes: 2000 mg/m³. STEL 15 minutes: 558 ppm.
Ethene, homopolymer	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)** TWA 8 hours: 5 mg/m³. Form: Dust.
2-ethylhexanoic acid, manganese salt	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [mangan a jeho anorganické sloučeniny]** TWA 8 hours: 0.05 mg/m³ (as Mn). Form: aerosol, respirable fraction.. STEL 15 minutes: 0.1 mg/m³ (as Mn). Form: aerosol, respirable fraction.. STEL 15 minutes: 0.4 mg/m³ (as Mn). Form: aerosol, inhalable fraction.. TWA 8 hours: 0.2 mg/m³ (as Mn). Form: aerosol, inhalable fraction..
Cobalt bis(2-ethylhexanoate)	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [kobalt a jeho sloučeniny]** Carc, Repr. Sensitiser. TWA 8 hours: 0.05 mg/m³ (as Co). Form: aerosol, inhalable fraction.. STEL 15 minutes: 0.1 mg/m³ (as Co). Form: aerosol, inhalable fraction..
White mineral oil (petroleum)	**Working Environment Authority (Denmark, 3/2024) [olietåge, mineraloliepartikler]** TWA 8 hours: 1 mg/m³. Form: mist and particles. STEL 15 minutes: 2 mg/m³. Form: mist and particles.
Naphtha (petroleum), hydrotreated light	**Working Environment Authority (Denmark, 3/2024) [hexan, andre isomere end n-hexan]** TWA 8 hours: 200 ppm. TWA 8 hours: 700 mg/m³. STEL 15 minutes: 1400 mg/m³. STEL 15 minutes: 400 ppm.
Polyethylene wax	**Working Environment Authority (Denmark, 3/2024)** TWA 8 hours: 2 mg/m³. Form: Fume. STEL 15 minutes: 4 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Working Environment Authority (Denmark, 3/2024) [zirconiumforbindelser]** TWA 8 hours: 5 mg/m³ (calculated as Zr).

SECTION 8: Exposure controls/personal protection

	STEL 15 minutes: 10 mg/m³ (calculated as Zr).
2-ethylhexanoic acid, manganese salt	**Working Environment Authority (Denmark, 3/2024) [uorganiske manganforbindelser]** TWA 8 hours: 0.2 mg/m³ (calculated as Mn). Form: inhalable. TWA 8 hours: 0.05 mg/m³ (calculated as Mn). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**Working Environment Authority (Denmark, 3/2024) [uorganiske cobaltforbindelser]** K. TWA 8 hours: 0.01 mg/m³ (calculated as Co).
Naphtha (petroleum), hydrotreated light	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) [heksaanid v.a n-heksaan]** TWA 8 hours: 700 mg/m³. TWA 8 hours: 200 ppm. STEL 15 minutes: 1100 mg/m³. STEL 15 minutes: 300 ppm.
Polyethylene wax	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** TWA 8 hours: 2 mg/m³. Form: Vapour.
2-ethylhexanoic acid, manganese salt	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) [mangaan ja mangaani anorgaanilised ühendid]** TWA 8 hours: 0.05 mg/m³ (calculated for manganese). Form: Respirable dust. TWA 8 hours: 0.2 mg/m³ (calculated for manganese). Form: Total dust.
Cobalt bis(2-ethylhexanoate)	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) [koobalt ja anorgaanilised ühendid]** Sensitiser. TWA 8 hours: 0.05 mg/m³ (calculated as Co).
2-ethylhexanoic acid, manganese salt	**EU OEL (Europe, 1/2022) [Manganese and inorganic manganese compounds]** TWA 8 hours: 0.05 mg/m³ ((as manganese)). Form: Respirable fraction. TWA 8 hours: 0.2 mg/m³ ((as manganese)). Form: Inhalable fraction.
Linseed-oil	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Öljysumu]** TWA 8 hours: 5 mg/m³. Form: Mist.
White mineral oil (petroleum)	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Öljysumu]** TWA 8 hours: 5 mg/m³. Form: Mist.
Naphtha (petroleum), hydrotreated light	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Heksaani, paitsi n-heksaani]** TWA 8 hours: 500 ppm. TWA 8 hours: 1800 mg/m³. STEL 15 minutes: 630 ppm. STEL 15 minutes: 2300 mg/m³. **Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Heksaani, isomeerien seos (joka sisältää vähemmän kuin 5% n-heksaania)]** STEL 15 minutes: 630 ppm. TWA 8 hours: 1800 mg/m³. TWA 8 hours: 500 ppm. STEL 15 minutes: 2300 mg/m³.
Polyethylene wax	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Parafiinihuurut]** TWA 8 hours: 1 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Zirkonium ja sen yhdisteet]** TWA 8 hours: 1 mg/m³ (calculated as Zr).
2-ethylhexanoic acid, manganese salt	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Mangaani ja sen epäorgaaniset yhdisteet]** TWA 8 hours: 0.2 mg/m³ (calculated as Mn). Form: inhalable dust. TWA 8 hours: 0.02 mg/m³ (calculated as Mn). Form: Respirable

SECTION 8: Exposure controls/personal protection

	dust.
Cobalt bis(2-ethylhexanoate)	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Koboltti ja sen epäorgaaniset yhdisteet]** TWA 8 hours: 0.02 mg/m³ (calculated as Co).
Naphtha (petroleum), hydrotreated light	**Ministry of Labor (France, 6/2024) [Hexane (autres isomères)]** TWA 8 hours: 500 ppm. Notes: Permissible limit values (circulars) TWA 8 hours: 1800 mg/m³. Notes: Permissible limit values (circulars)
Polyethylene wax	**Ministry of Labor (France, 6/2024)** TWA 8 hours: 2 mg/m³. Form: Fume. Notes: Permissible limit values (circulars)
2-ethylhexanoic acid, manganese salt	**Ministry of Labor (France, 6/2024) [manganèse et ses composés]** TWA 8 hours: 0.2 mg/m³ (as Mn). Form: Inhalable fraction. Notes: Indicative regulatory limit values (decree of 30-06-2004 modified) TWA 8 hours: 0.05 mg/m³ (as Mn). Form: Respirable fraction. Notes: Indicative regulatory limit values (decree of 30-06-2004 modified)
Tung oil	**TRGS 900 OEL (Germany, 6/2024) [Triglyceride]** PEAK 15 minutes: 20 mg/m³. Form: Respirable fraction. TWA 8 hours: 5 mg/m³. Form: Respirable fraction.
Linseed-oil	**TRGS 900 OEL (Germany, 6/2024) [Triglyceride]** PEAK 15 minutes: 20 mg/m³. Form: Respirable fraction. TWA 8 hours: 5 mg/m³. Form: Respirable fraction.
White mineral oil (petroleum)	**TRGS 900 OEL (Germany, 6/2024)** PEAK 15 minutes: 20 mg/m³. Form: Respirable fraction. TWA 8 hours: 5 mg/m³. Form: Respirable fraction. **DFG MAC-values list (Germany, 7/2023)** Develop C. PEAK 15 minutes: 20 mg/m³ 4 times per shift [Interval: 1 hour]. Form: respirable fraction. TWA 8 hours: 5 mg/m³. Form: respirable fraction.
Naphtha (petroleum), hydrotreated light	**TRGS 900 OEL (Germany, 6/2024) [Hexan Isomere (außer n-Hexan) und Methylcyclopentan]** TWA 8 hours: 1800 mg/m³. TWA 8 hours: 500 ppm. PEAK 15 minutes: 3600 mg/m³. PEAK 15 minutes: 1000 ppm. **DFG MAC-values list (Germany, 7/2023) [Hexane]** Develop D. TWA 8 hours: 500 ppm. PEAK 15 minutes: 1000 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 1800 mg/m³. PEAK 15 minutes: 3600 mg/m³ 4 times per shift [Interval: 1 hour].
2-ethylhexanoic acid, manganese salt	**TRGS 900 OEL (Germany, 6/2024) [Mangan und seine anorganischen Verbindungen]** TWA 8 hours: 0.2 mg/m³. Form: Inhalable fraction. PEAK 15 minutes: 0.16 mg/m³. Form: Respirable fraction. PEAK 15 minutes: 1.6 mg/m³. Form: Inhalable fraction. TWA 8 hours: 0.02 mg/m³. Form: Respirable fraction. **DFG MAC-values list (Germany, 7/2023) [Manganese and its inorganic compounds]** Develop C. TWA 8 hours: 0.02 mg/m³. Form: respirable fraction. PEAK 15 minutes: 0.16 mg/m³ 4 times per shift [Interval: 1 hour]. Form: respirable fraction. PEAK 15 minutes: 1.6 mg/m³ 4 times per shift [Interval: 1 hour]. Form: inhalable fraction. TWA 8 hours: 0.2 mg/m³. Form: inhalable fraction.
Cobalt bis(2-ethylhexanoate)	**DFG MAC-values list (Germany, 7/2023) [Cobalt and cobalt compounds]** Carc 2, Muta 3A. Absorbed through skin , Inhalation sensitiser , Skin sensitiser.

SECTION 8: Exposure controls/personal protection

White mineral oil (petroleum)	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021) [ορυκτέλαιο]** TWA 8 hours: 5 mg/m³. Form: mist. **Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021) [εργασίες που συνεπάγονται δερματική έκθεση σε ορυκτέλαια που έχουν χρησιμοποιηθεί προηγουμένως σε κινητήρες εσωτερικής καύσης για τη λίπανση και την ψύξη των κινητών μερών εντός του κινητήρα]** Absorbed through skin.
Naphtha (petroleum), hydrotreated light	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021) [εξάνιο (όλα τα ισομερή)]** TWA 8 hours: 500 ppm. TWA 8 hours: 1800 mg/m³. STEL 15 minutes: 1000 ppm. STEL 15 minutes: 3600 mg/m³.
Polyethylene wax	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021)** TWA 8 hours: 2 mg/m³. Form: Fume. STEL 15 minutes: 6 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021) [Ζιρκόνιο και ενώσεις του]** TWA 8 hours: 5 mg/m³. STEL 15 minutes: 10 mg/m³.
2-ethylhexanoic acid, manganese salt	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021) [μαγγάνιο και ενώσεις του]** TWA 8 hours: 0.2 mg/m³ (as manganese). Form: Inhalable fraction. TWA 8 hours: 0.05 mg/m³ (as manganese). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021) [κοβαλτίου ενώσεις]** TWA 8 hours: 0.1 mg/m³ (as Co).
White mineral oil (petroleum)	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023) [olaj (ásványi)]** TWA 8 hours: 5 mg/m³. Form: Mist.
2-ethylhexanoic acid, zirconium salt	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023) [CIRKÓNIUM VEGYÜLETEI]** TWA 8 hours: 5 mg/m³ (as Zr). PEAK 15 minutes: 20 mg/m³ (as Zr).
2-ethylhexanoic acid, manganese salt	**EU OEL (Europe, 1/2022) [Manganese and inorganic manganese compounds]** TWA 8 hours: 0.05 mg/m³ ((as manganese)). Form: Respirable fraction. TWA 8 hours: 0.2 mg/m³ ((as manganese)). Form: Inhalable fraction.
Cobalt bis(2-ethylhexanoate)	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023) [KOBALT ÉS SZERVETLEN VEGYÜLETEI]** Sensitiser. TWA 8 hours: 0.02 mg/m³ (as Co).
White mineral oil (petroleum)	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2023) [Olíuþoka, steinefnaolíuagnir]** TWA 8 hours: 1 mg/m³. Form: particulates.
Naphtha (petroleum), hydrotreated light	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2023) [Hexan, aðrir ísómerar en n -hexan]** TWA 8 hours: 700 mg/m³. TWA 8 hours: 200 ppm.
Polyethylene wax	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2023)** TWA 8 hours: 2 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2023) [Sirkóníumsambönd]** TWA 8 hours: 5 mg/m³ (as Zr).
2-ethylhexanoic acid, manganese salt	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2023) [mangan og ólífraen mangansambönd]** TWA 8 hours: 0.2 mg/m³ (as Mn). Form: percentage of inhaled air.

SECTION 8: Exposure controls/personal protection

	. TWA 8 hours: 0.05 mg/m³ (as Mn). Form: percentage of exhaled air..
Cobalt bis(2-ethylhexanoate)	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2023) [Kóbalt og ólífræn sambönd]** Sensitiser. TWA 8 hours: 0.02 mg/m³ (as Co). Form: Dust and fumes.
White mineral oil (petroleum)	**NAOSH (Ireland, 4/2024) [Mineral oil, pure, highly & severely refined]** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 5 ppm. Form: inhalable dust.
Naphtha (petroleum), hydrotreated light	**NAOSH (Ireland, 4/2024) [hexane]** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 500 ppm. OELV 8 hours: 1800 mg/m³. OELV 15 minutes: 1000 ppm. OELV 15 minutes: 3600 mg/m³.
Polyethylene wax	**NAOSH (Ireland, 4/2024)** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 2 mg/m³. Form: fume. OELV 15 minutes: 6 mg/m³. Form: fume.
2-ethylhexanoic acid, zirconium salt	**NAOSH (Ireland, 4/2024) [zirconium compounds]** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 5 mg/m³ (as Zr). OELV 15 minutes: 10 mg/m³ (as Zr).
2-ethylhexanoic acid, manganese salt	**NAOSH (Ireland, 4/2024) [manganese and inorganic manganese compounds]** Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 0.2 mg/m³ (as Mn). Form: Inhalable fraction. OELV 8 hours: 0.05 mg/m³ (as Mn). Form: respirable fraction.
Cobalt bis(2-ethylhexanoate)	**NAOSH (Ireland, 4/2024) [cobalt & cobalt compounds]** Carc 1B, Repr 1B. Sensitiser. Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 0.02 mg/m³ (as Co).
2-ethylhexanoic acid, manganese salt	**Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020) [Manganese e composti inorganici del manganese]** Limit value 8 hours: 0.05 mg/m³ (as Mn). Form: respirable fraction. Limit value 8 hours: 0.2 mg/m³ (as Mn). Form: inhalable fraction.
White mineral oil (petroleum)	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) [Naftas minerāleļļas]** TWA 8 hours: 5 mg/m³.
Naphtha (petroleum), hydrotreated light	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) [Ogļūdeņraži, piesātinātie alifātiskie, C1-10]** TWA 8 hours: 100 mg/m³ (as C). STEL 15 minutes: 300 mg/m³ (as C).
Ethene, homopolymer	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) [Pilietilēns]** TWA 8 hours: 5 mg/m³. Form: Dust.
2-ethylhexanoic acid, manganese salt	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) [mangāns un tā neorganiskie savienojumi]** TWA 8 hours: 0.05 mg/m³ (as manganese). Form: respirable fraction. TWA 8 hours: 0.2 mg/m³ (as manganese). Form: Inhalable fraction.
Linseed-oil	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) [tepalo rūkas, įskaitant dūmus]** TWA 8 hours: 1 mg/m³. Form: Mist. STEL 15 minutes: 3 mg/m³. Form: Mist.
White mineral oil (petroleum)	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) [tepalo rūkas, įskaitant dūmus]** TWA 8 hours: 1 mg/m³. Form: Mist. STEL 15 minutes: 3 mg/m³. Form: Mist.

SECTION 8: Exposure controls/personal protection

Naphtha (petroleum), hydrotreated light	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) [heksanai, išskyrus n-heksaną]** TWA 8 hours: 700 mg/m³. TWA 8 hours: 200 ppm. STEL 15 minutes: 1100 mg/m³. STEL 15 minutes: 300 ppm.
Ethene, homopolymer	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)** TWA 8 hours: 10 mg/m³.
2-ethylhexanoic acid, manganese salt	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) [manganas ir neorganiniai jo junginiai]** TWA 8 hours: 0.05 mg/m³ (as Mn). Form: Respirable fraction. TWA 8 hours: 0.2 mg/m³ (as Mn). Form: Inhalable fraction.
Cobalt bis(2-ethylhexanoate)	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) [kobaltas ir jo neorganinai junginiai]** Carc, Muta. Sensitiser. TWA 8 hours: 0.05 mg/m³ (as Co).
2-ethylhexanoic acid, manganese salt	**Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) [manganèse et ses composés inorganiques]** TWA 8 hours: 0.05 mg/m³ (as manganese). Form: respirable fraction. TWA 8 hours: 0.2 mg/m³ (as manganese). Form: inhalable fraction.
White mineral oil (petroleum)	**Ministry of Health (Malta, 4/2024) [mineral oils that have been used before in internal combustion engines to lubricate and cool the moving parts within the engine]** Absorbed through skin.
2-ethylhexanoic acid, manganese salt	**EU OEL (Europe, 1/2022) [Manganese and inorganic manganese compounds]** TWA 8 hours: 0.05 mg/m³ ((as manganese)). Form: Respirable fraction. TWA 8 hours: 0.2 mg/m³ ((as manganese)). Form: Inhalable fraction.
White mineral oil (petroleum)	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024) [olienevel (minerale olie)]** TWA 8 hours: 5 mg/m³. Form: Mist.
2-ethylhexanoic acid, manganese salt	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024) [mangaan en anorganische mangaanverbindingen]** STEL 15 minutes: 0.05 mg/m³ (as manganese). Form: respirable. TWA 8 hours: 0.2 mg/m³ (as manganese). Form: inhalable.
White mineral oil (petroleum)	**FOR-2011-12-06-1358 (Norway, 12/2022) [oljetåke (mineralolje-partikler)]** TWA 8 hours: 1 mg/m³. Form: mineral oil particles. **FOR-2011-12-06-1358 (Norway, 12/2022) [oljedamp]** TWA 8 hours: 50 mg/m³. Form: Vapour.
Naphtha (petroleum), hydrotreated light	**FOR-2011-12-06-1358 (Norway, 12/2022) [heksan (unntatt n-heksan)]** TWA 8 hours: 250 ppm. TWA 8 hours: 1050 mg/m³.
Polyethylene wax	**FOR-2011-12-06-1358 (Norway, 12/2022)** TWA 8 hours: 2 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**FOR-2011-12-06-1358 (Norway, 12/2022) [zirkoniumforbindelser]** TWA 8 hours: 5 mg/m³ (calculated as Zr).
2-ethylhexanoic acid, manganese salt	**FOR-2011-12-06-1358 (Norway, 12/2022) [mangan og uorganiske manganforbindelser]** TWA 8 hours: 0.2 mg/m³ (calculated as Mn). Form: Inhalable fraction. TWA 8 hours: 0.05 mg/m³ (calculated as Mn). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**FOR-2011-12-06-1358 (Norway, 12/2022) [uorganiske koboltforbindelser (unntatt Co(II))]** Repr. Sensitiser. TWA 8 hours: 0.02 mg/m³ (calculated as Co).

SECTION 8: Exposure controls/personal protection

White mineral oil (petroleum)	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 8/2023) [Highly refined mineral oils with the exception of cutting fluids]** TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
Naphtha (petroleum), hydrotreated light	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 8/2023) [benzin extraction]** TWA 8 hours: 500 mg/m³. STEL 15 minutes: 1500 mg/m³. **Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 8/2023) [hexane – other acyclic isomers except hexane]** TWA 8 hours: 400 mg/m³. STEL 15 minutes: 1200 mg/m³.
Polyethylene wax	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 8/2023)** TWA 8 hours: 2 mg/m³. Form: Inhalable fraction.
2-ethylhexanoic acid, zirconium salt	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 8/2023) [zirconium and compounds]** TWA 8 hours: 5 mg/m³ (calculated as Zr). STEL 15 minutes: 10 mg/m³ (calculated as Zr).
2-ethylhexanoic acid, manganese salt	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 8/2023) [manganese and inorganic compounds]** TWA 8 hours: 0.2 mg/m³ (calculated as Mn). Form: Inhalable fraction. TWA 8 hours: 0.05 mg/m³ (calculated as Mn). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 8/2023) [cobalt and its inorganic compounds]** TWA 8 hours: 0.02 mg/m³ (calculated as Co).
White mineral oil (petroleum)	**Portuguese Institute of Quality (Portugal, 11/2014) [óleo mineral, puros, alta e fortemente refinado]** A4. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
Naphtha (petroleum), hydrotreated light	**Portuguese Institute of Quality (Portugal, 11/2014) [hexano, outros isómeros]** TWA 8 hours: 500 ppm. STEL 15 minutes: 1000 ppm.
Polyethylene wax	**Portuguese Institute of Quality (Portugal, 11/2014)** TWA 8 hours: 2 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Portuguese Institute of Quality (Portugal, 11/2014) [zircónio e compostos]** A4. TWA 8 hours: 5 mg/m³ (expressed as Zr). STEL 15 minutes: 10 mg/m³ (expressed as Zr).

2-ethylhexanoic acid, manganese salt	**Portuguese Institute of Quality (Portugal, 11/2014) [manganês e compostos inorgânicos]** A4. TWA 8 hours: 0.02 mg/m³ (expressed as Mn). Form: Respirable fraction. TWA 8 hours: 0.1 mg/m³ (expressed as Mn). Form: Inhalable fraction.
Cobalt bis(2-ethylhexanoate)	**Portuguese Institute of Quality (Portugal, 11/2014) [cobalto, compostos inorgânicos]** A3. TWA 8 hours: 0.02 mg/m³ (expressed as Co). **Portuguese Institute of Quality (Portugal, 11/2014) [cobalto e compostos inorgânicos]** A3. TWA 8 hours: 0.02 mg/m³ (expressed as Co).
White mineral oil (petroleum)	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) [Uleiuri minerale]** VLA 8 hours: 5 mg/m³. Short term 15 minutes: 10 mg/m³.
Polyethylene wax	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** VLA 8 hours: 2 mg/m³. Form: Fume. Short term 15 minutes: 6 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) [Zirconiu şi compuşi]** VLA 8 hours: 5 mg/m³ (expressed as Zr). Short term 15 minutes: 10 mg/m³ (expressed as Zr).
2-ethylhexanoic acid, manganese salt	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) [mangan și compuși anorganici de mangan]** VLA 8 hours: 0.05 mg/m³ (expressed in Mn). Form: Respirable fraction. VLA 8 hours: 0.2 mg/m³ (expressed in Mn). Form: Inhalable fraction.
White mineral oil (petroleum)	**Government regulation SR c. 355/2006 (Slovakia, 7/2024) [oleje minerálne]** Inhalation sensitiser. TWA 8 hours: 1 mg/m³ (Mineral oils). Form: liquid aerosol, fumes. TWA 8 hours: 5 ppm (Mineral oils). Form: liquid aerosol, fumes. STEL 15 minutes: 3 mg/m³ (Mineral oils). Form: liquid aerosol, fumes. STEL 15 minutes: 15 ppm (Mineral oils). Form: liquid aerosol, fumes.
Naphtha (petroleum), hydrotreated light	**Government regulation SR c. 355/2006 (Slovakia, 7/2024) [hexán, všetky izoméry okrem n-hexánu]** Inhalation sensitiser. TWA 8 hours: 500 ppm (Hexane (isomers)). TWA 8 hours: 1800 mg/m³ (Hexane (isomers)). STEL 15 minutes: 3600 mg/m³ (Hexane (isomers)). STEL 15 minutes: 1000 ppm (Hexane (isomers)).
Ethene, homopolymer	**Government regulation SR c. 355/2006 (Slovakia, 7/2024)** Inhalation sensitiser. TWA 8 hours: 5 mg/m³. Form: solid aerosols.
Polyethylene wax	**Government regulation SR c. 355/2006 (Slovakia, 7/2024)** Inhalation sensitiser. STEL 15 minutes: 6 mg/m³. Form: Fume. TWA 8 hours: 2 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**Government regulation SR c. 355/2006 (Slovakia, 7/2024) [zirkón a jeho zlúčeniny]** Inhalation sensitiser. TWA 8 hours: 1 mg/m³ (Zirconium and its compounds, as Zr).
2-ethylhexanoic acid, manganese salt	**Government regulation SR c. 355/2006 (Slovakia, 7/2024) [mangán a jeho anorganické zlúčeniny]** Inhalation sensitiser. TWA 8 hours: 0.2 mg/m³ (Manganese and its inorganic compounds, as manganese). Form: Inhalable fraction. TWA 8 hours: 0.05 mg/m³ (Manganese and its inorganic compounds, as manganese). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**Government regulation SR c. 355/2006 (Slovakia, 7/2024)**

	[kobalt a jeho zlúčeniny] Sensitiser , Inhalation sensitiser. TWA 8 hours: 0.05 mg/m³ (Cobalt and its compounds, as Co).
White mineral oil (petroleum)	**Regulation on the protection of workers from the risks related to exposure to carcinogens, mutagens or reprotoxic substances at work (Slovenia, 4/2024) [mineralna olja]** Absorbed through skin. **Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** KTV 15 minutes: 20 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. TWA 8 hours: 5 mg/m³.
Naphtha (petroleum), hydrotreated light	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) [heksan izomere]** KTV 15 minutes: 1000 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. TWA 8 hours: 500 ppm. KTV 15 minutes: 3600 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. TWA 8 hours: 1800 mg/m³.
2-ethylhexanoic acid, zirconium salt	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) [cirkonij, v vodi netopne cirkonijeve spojine]** TWA 8 hours: 1 mg/m³. Form: Inhalable fraction. KTV 15 minutes: 1 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. Form: Inhalable fraction.
2-ethylhexanoic acid, manganese salt	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) [mangan in anorganske manganove spojine]** TWA 8 hours: 0.2 mg/m³ ((calculated as Manganese)). Form: Inhalable fraction. KTV 15 minutes: 1.6 mg/m³ ((calculated as Manganese)), 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. Form: Inhalable fraction. KTV 15 minutes: 0.4 mg/m³ ((calculated as Manganese)), 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. Form: Respirable fraction. TWA 8 hours: 0.05 mg/m³ ((calculated as Manganese)). Form: Respirable fraction.
White mineral oil (petroleum)	**National institute of occupational safety and health (Spain, 1/2024) [aceite mineral refinado]** TWA 8 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist.
Naphtha (petroleum), hydrotreated light	**National institute of occupational safety and health (Spain, 1/2024) [hexano (todos los isómeros excepto n-hexano)]** TWA 8 hours: 500 ppm. TWA 8 hours: 1790 mg/m³. STEL 15 minutes: 1000 ppm. STEL 15 minutes: 3580 mg/m³.
Polyethylene wax	**National institute of occupational safety and health (Spain, 1/2024)** TWA 8 hours: 2 mg/m³. Form: Fume.
2-ethylhexanoic acid, zirconium salt	**National institute of occupational safety and health (Spain, 1/2024) [compuestos de circonio]** TWA 8 hours: 5 mg/m³ (as Zr). STEL 15 minutes: 10 mg/m³ (as Zr).
2-ethylhexanoic acid, manganese salt	**National institute of occupational safety and health (Spain, 1/2024) [manganeso elemental y compuestos inorgánicos]** TWA 8 hours: 0.2 mg/m³ (as Mn). Form: Inhalable fraction. TWA 8 hours: 0.05 mg/m³ (as Mn). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**National institute of occupational safety and health (Spain,**

SECTION 8: Exposure controls/personal protection

	1/2024) [compuestos inorgánicos de cobalto excepto los expresamente indicados] Inhalation sensitiser , Skin sensitiser. TWA 8 hours: 0.02 mg/m³ (as Co).
Linseed-oil	**Work environment authority Regulation 2018:1 (Sweden, 11/2022) [oil mist, incl. oil fumes]** TWA 8 hours: 1 mg/m³. Form: mist and fume. STEL 15 minutes: 3 mg/m³. Form: mist and fume.
White mineral oil (petroleum)	**Work environment authority Regulation 2018:1 (Sweden, 11/2022) [mineralolja, gammal använd]** Carc. Absorbed through skin. **Work environment authority Regulation 2018:1 (Sweden, 11/2022) [oil mist, incl. oil fumes]** TWA 8 hours: 1 mg/m³. Form: mist and fume. STEL 15 minutes: 3 mg/m³. Form: mist and fume.
Naphtha (petroleum), hydrotreated light	**Work environment authority Regulation 2018:1 (Sweden, 11/2022) [hexanes]** TWA 8 hours: 200 ppm. TWA 8 hours: 700 mg/m³. STEL 15 minutes: 300 ppm. STEL 15 minutes: 1100 mg/m³.
2-ethylhexanoic acid, manganese salt	**Work environment authority Regulation 2018:1 (Sweden, 11/2022) [inorganic compounds of manganese]** TWA 8 hours: 0.2 mg/m³ (as Mn). Form: inhalable fraction. TWA 8 hours: 0.05 mg/m³ (as Mn). Form: respirable fraction.
Cobalt bis(2-ethylhexanoate)	**Work environment authority Regulation 2018:1 (Sweden, 11/2022) [cobalt and inorganic compounds]** Carc. Absorbed through skin , Sensitiser. TWA 8 hours: 0.02 mg/m³ (as Co). Form: inhalable fraction.
Tung oil	**SUVA (Switzerland, 1/2024) [Triglyceride]** STEL 15 minutes: 20 mg/m³. Form: Inhalable fraction. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
Linseed-oil	**SUVA (Switzerland, 1/2024) [Triglyceride]** STEL 15 minutes: 20 mg/m³. Form: Inhalable fraction. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
White mineral oil (petroleum)	**SUVA (Switzerland, 1/2024)** TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
Naphtha (petroleum), hydrotreated light	**SUVA (Switzerland, 1/2024)** TWA 8 hours: 500 ppm. TWA 8 hours: 2000 mg/m³.
Polyethylene wax	**SUVA (Switzerland, 1/2024)** TWA 8 hours: 2 mg/m³. Form: respirable dust and fumes.
2-ethylhexanoic acid, zirconium salt	**SUVA (Switzerland, 1/2024) [zirkonium und seine unlöslichen Verbindungen]** TWA 8 hours: 5 mg/m³ (calculated as Zr). Form: Inhalable fraction. STEL 15 minutes: 10 mg/m³ (calculated as Zr). Form: Inhalable fraction.
2-ethylhexanoic acid, manganese salt	**SUVA (Switzerland, 1/2024) [Mangan und seine anorganischen Verbindungen]** TWA 8 hours: 0.2 mg/m³ (calculated as Mn). Form: Inhalable fraction. TWA 8 hours: 0.1 mg/m³ (calculated as Mn). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**SUVA (Switzerland, 1/2024) [Cobalt und seine Verbindungen]** Carc 1B, Muta 2, Repr 1B. Absorbed through skin , Sensitiser. TWA 8 hours: 0.05 mg/m³ (calculated as Co). Form: inhalable dust and aerosol.

2-ethylhexanoic acid, zirconium salt	**EH40/2005 WELs (United Kingdom (UK), 1/2020) [zirconium compounds]** STEL 15 minutes: 10 mg/m³ (as Zr). TWA 8 hours: 5 mg/m³ (as Zr).
2-ethylhexanoic acid, manganese salt	**EH40/2005 WELs (United Kingdom (UK), 1/2020) [manganese and its inorganic compounds]** TWA 8 hours: 0.2 mg/m³ (as Mn). Form: Inhalable fraction. TWA 8 hours: 0.05 mg/m³ (as Mn). Form: Respirable fraction.
Cobalt bis(2-ethylhexanoate)	**EH40/2005 WELs (United Kingdom (UK), 1/2020) [cobalt and cobalt compounds]** Carc. Inhalation sensitiser. TWA 8 hours: 0.1 mg/m³ (as Co).

Biological exposure indices

Product/ingredient name	Exposure indices
2-ethylhexanoic acid, manganese salt	**VGU BEI (Austria, 9/2020) [manganese or its compounds]** BEI Fitness: 20 µg/l, manganese [in blood]. Sampling time: one year.
Cobalt bis(2-ethylhexanoate)	**VGU BEI (Austria, 9/2020) [cobalt or its compounds]** BEI Fitness: 10 µg/l, cobalt [in urine]. Sampling time: one year.
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Cobalt bis(2-ethylhexanoate)	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020) [Cobalt and its inorganic compounds]** BEI: 130 nmol/l, cobalt [in urine]. Sampling time: at the end of each work shift work step or a week or exposure period.
Cobalt bis(2-ethylhexanoate)	**Biological limit values (BLV) - Labour Code / ANSES (France, 4/2023) [cobalt and mineral compounds]** BLV: 5 µg/g Cr, cobalt [in urine]. Sampling time: end of shift and weekend.
2-ethylhexanoic acid, manganese salt	**DFG BEI-values list (Germany, 7/2023) [Manganese and its inorganic compounds]** BEI: See Section XII.2: Substances for which no BAT values are currently be derived, but documentaries in the "work Medico-toxicological justifications for BAT values, EKA and BLW", manganese [in blood]. Sampling time: end of exposure or end of shift / for long-term exposures: at the end of the shift after several shifts. BEI: 15 µg/l, manganese [in blood]. Sampling time: end of exposure or end of shift / for long-term exposures: at the end of the shift after several shifts.
Cobalt bis(2-ethylhexanoate)	**DFG BEI-values list (Germany, 7/2023) [Cobalt and its compounds]** Notes: danger from percutaneous absorption (see p. 211 and p. 228). BGV: 35 µg/l, cobalt [in urine]. Sampling time: for long-term exposures: at the end of the shift after several shifts. BEI: 1.5 µg/l, cobalt [in urine]. Sampling time: for long-term exposures: at the end of the shift after several shifts.
No exposure indices known.	
No exposure indices known.	

No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Cobalt bis(2-ethylhexanoate)	**Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) [cobalt and its compounds]** BEI: 130 nmol/L, cobalt [in urine]. Sampling time: at the end of the exposure or at the end of the shift. BEI: 7 µg/l, cobalt [in blood]. Sampling time: at the end of the exposure or at the end of the shift.
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
2-ethylhexanoic acid, manganese salt	**HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) [Manganese compounds]** OBLV: 10 µg/l, manganese [in urine]. Sampling time: end of shift.
Cobalt bis(2-ethylhexanoate)	**HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) [Cobalt compounds]** OBLV: 1 µg/l, cobalt [in blood]. Sampling time: end of the week. OBLV: 15 µg/l, cobalt [in urine]. Sampling time: end of the week.
Cobalt bis(2-ethylhexanoate)	**Government regulation SR c. 355/2006 (Slovakia, 5/2024) [cobalt and its compounds]** BLV: 38.45 nmol/mmol creatinine, as cobalt [in urine]. Sampling time: no limitation. BLV: 20.03 µg/g creatinine, as cobalt [in urine]. Sampling time: no limitation. BLV: 509.8 nmol/l, as cobalt [in urine]. Sampling time: no limitation. BLV: 30 µg/l, as cobalt [in urine]. Sampling time: no limitation.
No exposure indices known.	
Cobalt bis(2-ethylhexanoate)	**National institute of occupational safety and health (Spain, 1/2024) [cobalt and inorganic compouns of cobalt, except oxides]** VLB: 1 µg/l, cobalt [in blood]. Sampling time: end of workweek. VLB: 15 µg/l, cobalt [in urine]. Sampling time: end of workweek.
No exposure indices known.	
Cobalt bis(2-ethylhexanoate)	**SUVA (Switzerland, 1/2024) [Cobalt and its compounds]** BEI: 30 µg/l, cobalt [in urine]. Sampling time: immediately after exposure or after working hours. BEI: 509 nmol/l, cobalt [in urine]. Sampling time: immediately after exposure or after working hours.
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.

SECTION 8: Exposure controls/personal protection

DNELs/DMELs

Product/ingredient name	Result
White mineral oil (petroleum)	**DNEL - General population - Long term - Oral** 25 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 34.78 mg/m³ Effects: Systemic **DNEL - General population - Long term - Dermal** 93.02 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation** 164.56 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Dermal** 217.05 mg/kg bw/day Effects: Systemic
Naphtha (petroleum), hydrotreated light	**DNEL - General population - Long term - Oral** 149 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 149 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 300 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 0.41 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 1.9 mg/m³ Effects: Systemic **DNEL - General population - Long term - Inhalation** 178.57 mg/m³ Effects: Local **DNEL - General population - Short term - Inhalation** 640 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 837.5 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 1066.67 mg/m³ Effects: Local **DNEL - General population - Short term - Inhalation** 1152 mg/m³ Effects: Systemic **DNEL - Workers - Short term - Inhalation** 1286.4 mg/m³ Effects: Systemic

2-ethylhexanoic acid, zirconium salt	**DNEL - General population - Long term - Inhalation** 0.58 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 2.351 mg/m³ Effects: Systemic **DNEL - General population - Long term - Oral** 0.167 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 0.167 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 0.333 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 0.7 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 2.82 mg/m³ Effects: Local
2-ethylhexanoic acid, manganese salt	**DNEL - General population - Long term - Inhalation** 0.024 mg/m³ Effects: Local **DNEL - General population - Long term - Inhalation** 0.024 mg/m³ Effects: Systemic **DNEL - General population - Long term - Oral** 0.167 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 0.167 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 0.333 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation** 0.83 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 0.83 mg/m³ Effects: Systemic
Cobalt bis(2-ethylhexanoate)	**DNEL - General population - Long term - Inhalation** 37 µg/m³ Effects: Local **DNEL - General population - Long term - Oral** 175 µg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation**

235.1 µg/m³
Effects: Local

PNECs

Not available.

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Recommendations : Wear suitable gloves tested to EN374.

< 1 hour (breakthrough time): Nitrile gloves. thickness > 0.3 mm

1 - 4 hours (breakthrough time): 4H / Silver Shield® gloves.

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.

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.

Filter type: A

Filter type (spray application): A P

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.

Colour : Various

Odour : Slight

Odour threshold : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range :

Ingredient name	°C	°F	Method
White mineral oil (petroleum)	218 to 800	424.4 to 1472	ASTM D 1160
Linseed-oil	316.12	601	

Flammability : Not available.

Lower and upper explosion limit : Lower: 1.05% (Naphtha (petroleum), hydrotreated light)
Upper: 7.6% (Naphtha (petroleum), hydrotreated light)

Flash point : Closed cup: >60°C (>140°F)

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Polyethylene wax	244.85	472.7	
Naphtha (petroleum), hydrotreated light	280 to 470	536 to 878	DIN EN 14522

Decomposition temperature : Not available.

pH : Not available.

Viscosity : Not available.

Solubility(ies) :

Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Vapour pressure :

Ingredient name	Vapour Pressure at 20˚C			Vapour pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Naphtha (petroleum), hydrotreated light	42.15358	5.6	OECD 104	357.48039	47.7	OECD 104
White mineral oil (petroleum)	0.07501	0.01	OECD 104			

Relative density : Not available.

Density : 0.9 g/cm³

Vapour density : Not available.

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosive properties : Not available.

Oxidising properties : Not available.

9.2.2 Other safety characteristics

Not applicable.

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 : No specific data.

10.5 Incompatible materials : No specific data.

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
White mineral oil (petroleum)	**Rat - Oral - LD50** >5000 mg/kg
2-ethylhexanoic acid, zirconium salt	**Rabbit - Dermal - LD50** >5 g/kg
	Rat - Oral - LD50 >5 g/kg Toxic effects: Behavioral - Somnolence (general depressed activity)
Cobalt bis(2-ethylhexanoate)	**Rabbit - Dermal - LD50** >5 g/kg Toxic effects: Skin After topical exposure - Primary irritation
	Rat - Oral - LD50 1.22 g/kg Toxic effects: Behavioral - Ataxia Behavioral - Coma

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

N/A

Skin corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

SECTION 11: Toxicological information

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
Naphtha (petroleum), hydrotreated light	STOT SE 3, H336 (Narcotic effects)

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
2-ethylhexanoic acid, manganese salt	STOT RE 2, H373

Aspiration hazard

Product/ingredient name	Result
White mineral oil (petroleum)	ASPIRATION HAZARD - Category 1
Naphtha (petroleum), hydrotreated light	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure

Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

SECTION 11: Toxicological information

Skin contact : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Delayed and immediate effects as well as 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

Not available.

Conclusion/Summary [Product] : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage fertility. May damage the unborn child.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Not available.

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Not available.

Conclusion/Summary [Product] : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
White mineral oil (petroleum)	>6	-	High
Naphtha (petroleum), hydrotreated light	2.2 to 5.2	10 to 2500	High
2-ethylhexanoic acid, zirconium salt	-	2.96	Low
2-ethylhexanoic acid, manganese salt	-	2.96	Low
Cobalt bis(2-ethylhexanoate)	-	15600	High

SECTION 12: Ecological information

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logKoc	Koc
Cobalt bis(2-ethylhexanoate)	1.82	66.4852

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
White mineral oil (petroleum)	No	No	No	No	No	No	No
Naphtha (petroleum), hydrotreated light	No	No	No	No	No	No	No
2-ethylhexanoic acid, zirconium salt	No	No	No	No	No	No	No
2-ethylhexanoic acid, manganese salt	No	No	No	No	No	No	No
Cobalt bis(2-ethylhexanoate)	No	No	No	No	No	No	No

Mobility : Not available.

Conclusion/Summary : The product does not meet the criteria to be considered as a PMT or vPvM.

12.5 Results of PBT and vPvB assessment

Regulation (EC) No. 1907/2006 [REACH]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
White mineral oil (petroleum)	No	No	No	No	No	No	No
Naphtha (petroleum), hydrotreated light	No	No	No	No	No	No	No
2-ethylhexanoic acid, zirconium salt	No	No	No	No	No	No	No
2-ethylhexanoic acid, manganese salt	No	No	No	No	No	No	No
Cobalt bis(2-ethylhexanoate)	No	No	No	No	No	No	No

Regulation (EC) No. 1272/2008 [CLP]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
White mineral oil (petroleum)	No	No	No	No	No	No	No
Naphtha (petroleum), hydrotreated light	No	No	No	No	No	No	No
2-ethylhexanoic acid, zirconium salt	No	No	No	No	No	No	No
2-ethylhexanoic acid, manganese salt	No	No	No	No	No	No	No
Cobalt bis(2-ethylhexanoate)	No	No	No	No	No	No	No

Conclusion/Summary Regulation (EC) No. 1272/2008 [CLP] : The product does not meet the criteria to be considered as a PBT or vPvB.

12.6 Endocrine disrupting properties

Not available.

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised 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.

European waste catalogue (EWC) : 08.01.11

Packaging

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

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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	Not regulated.	9003	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	SUBSTANCES WITH A FLASH-POINT ABOVE 60 °C AND NOT MORE THAN 100 °C (Naphtha (petroleum), hydrotreated light)	-	-
14.3 Transport hazard class(es)	-	9	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

Additional information

ADN : The product is only regulated as a dangerous good when transported in tank vessels.

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 Maritime transport in bulk according to IMO instruments : Not relevant/applicable due to nature of the product.

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 authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
HARTÖL 6448-15	≥90	3 30

Labelling : Restricted to professional users.

Other EU regulations

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

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

Explosive precursors : Not applicable.

Ozone depleting substances (EU 2024/590)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Austria

Limitation of the use of organic solvents : Permitted.

Belgium

Book VI carcinogenic agents annex VI.2-1 - VI.2-3

Ingredient name	Status
Cobalt et ses composés	Listed

Czech Republic

Storage code : III

Denmark

Fire class : III-1

MAL-code : 0-1

SECTION 15: Regulatory information

Protection based on MAL : **According to the regulations on work involving coded products, the following stipulations apply to the use of personal protective equipment:**

General: Gloves must be worn for all work that may result in soiling. Apron/ coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. A face shield must be worn in work involving spattering if a full mask is not required. In this case, other recommended use of eye protection is not required.

In all spraying operations in which there is return spray, the following must be worn: respiratory protection and arm protectors/apron/coveralls/protective clothing as appropriate or as instructed.

MAL-code: 0-1
Application: When spraying in existing* spray booths, if the operator is outside the spray zone.

- Arm protectors must be worn.

During non-atomising spraying in existing* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone.

- Gas filter mask must be worn.

During all spraying where atomisation occurs in cabins or spray booths where the operator is inside the spray zone and during spraying outside a closed facility, cabin or booth.

- Full mask with combined filter, coveralls and hood must be worn.

Drying: Items for drying/drying ovens that are temporarily placed on such things as rack trolleys, etc, must be equipped with a mechanical exhaust system to prevent fumes from wet items from passing through workers' inhalation zone.

Polishing: When polishing treated surfaces, a mask with dust filter must be worn. When machine grinding, eye protection must be worn. Work gloves must always be worn.

Caution The regulations contain other stipulations in addition to the above.

*See Regulations.

Restrictions on use : Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.

List of undesirable substances : Not listed

Finland

France

Social Security Code, Articles L 461-1 to L 461-7 :

White mineral oil (petroleum)	RG 36, RG 36bis
Naphtha (petroleum), hydrotreated light	RG 84
Polyethylene wax	RG 36
Cobalt bis(2-ethylhexanoate)	RG 70

Reinforced medical surveillance : Act of July 11, 1977 determining the list of activities which require reinforced medical surveillance: not applicable

Germany

TRGS 905

SECTION 15: Regulatory information

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development
Cobalt compounds	K2	M1A	RF1A	RD1A

Storage class (TRGS 510) : 6.1C

Hazardous incident ordinance

This product is not controlled under the Germany Hazardous Incident Ordinance.

Hazard class for water : 3

Technical instruction on air quality control (TA Luft)

Number [Class]	Description	%
5.2.1	Total dust	4.8
5.2.2 [III]	Dusty inorganic substances	0.15
5.2.5	Organic substances	94.8
5.2.5 [I]	Organic substances	94.4
5.2.7.1.1 [I]	Carcinogenic substances	0.07
5.2.7.1.3	Reproductive toxic substances	0.2

Italy

D.Lgs. 152/06 : Not determined.

Netherlands

Ministry of Social Affairs and Employment (SZW) - Carcinogenic substances and processes, mutagenic or reprotoxic substances

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development	Harmful via breastfeeding
Naphtha (petroleum), hydrotreated light	Listed	Listed	-	-	-
hydrocarbon, C9-C11, n-alkane, iso-alkane, cyclic, containing <2% of aromatics, < 0,1% of benzene, < 1% of n-hexane and < 0,5 % of aromatic hydrocarbons	Listed	Listed	-	-	-
2-ethylhexanoic acid and salts excluding substances specifically listed in Annex VI of CLP	-	-	-	Development 1B	-
Naphtha (petroleum), hydrodesulfurized heavy	Listed	Listed	-	-	-
2-ethylhexanoic acid, manganese salt	-	-	Fertility 2	Development 1B	-

Water Discharge Policy (ABM) : Z(1) Non biodegradable substances with hazardous properties for humans and the environment (carcinogenicity/ mutagenicity/ reprotoxicity/ bioacumulative potential/ toxicity or persistence). Decontamination effort: Z

Norway

Sweden

Flammable liquid class (SRVFS 2005:10) : 3

Switzerland

VOC content : VOC (w/w): 7%

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

SECTION 15: Regulatory information

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

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
Repr. 1B, H360FD	Calculation method - Notes 11/12 summation process

Full text of abbreviated H statements

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

Date of issue/ Date of revision : 10/01/2025

SECTION 16: Other information

Date of previous issue : 05/01/2024

Version : 1.02

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.