

SAFETY DATA SHEET



HARTÖL 1394-50 - All variants

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

1.1 Product identifier

Product name : HARTÖL 1394-50 - 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]

Flam. Liq. 2, H225

Skin Sens. 1, H317

Repr. 1B, H360D

STOT SE 3, H336

Aquatic Chronic 3, H412

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 : H225 - Highly flammable liquid and vapour.
H317 - May cause an allergic skin reaction.
H336 - May cause drowsiness or dizziness.
H360D - May damage the unborn child.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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Label No : 51800

SECTION 2: Hazards identification

Response	: P308 + P313 - IF exposed or concerned: Get medical advice or attention.
Storage	: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: Contains: Naphtha (petroleum), hydrotreated heavy; 2-ethylhexanoic acid, zirconium salt and Cobalt bis(2-ethylhexanoate)
Supplemental label elements	:
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
Naphtha (petroleum), hydrotreated heavy	EC: 265-150-3 CAS: 64742-48-9 Index: 649-327-00-6	≥25 - ≤50	Flam. Liq. 3, H226 STOT SE 3, H336 Asp. Tox. 1, H304 EUH066	-	[1]
Naphtha (petroleum), hydrotreated light	EC: 265-151-9 CAS: 64742-49-0 Index: 649-328-00-1	≥10 - <25	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	-	[1]
2-ethylhexanoic acid, zirconium salt	REACH #: 01-2119979088-21 EC: 245-018-1 CAS: 22464-99-9	≤1	Repr. 1B, H360D	-	[1]
Cobalt bis (2-ethylhexanoate)	REACH #: 01-2119524678-29 EC: 205-250-6 CAS: 136-52-7	<0.3	Eye Irrit. 2, H319 Skin Sens. 1A, H317 Repr. 1B, H360FD Aquatic Acute 1, H400 Aquatic Chronic 3, H412	M [Acute] = 1	[1]
2-ethylhexanoic acid, manganese salt	REACH #: 01-2119979087-23 EC: 240-085-3 CAS: 15956-58-8	<0.3	Eye Irrit. 2, H319 Repr. 1B, H360D STOT RE 2, H373 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	-	[1] [2]

SECTION 3: Composition/information on ingredients

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 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. Get medical attention. If necessary, call a poison center or physician. 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** : 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. 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. If necessary, call a poison center or 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** : No specific data.
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations

SECTION 4: First aid measures

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 dry chemical, CO₂, 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 : Highly flammable liquid and vapour. 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 harmful 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

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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. 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). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

SECTION 6: Accidental release measures

- 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 the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt 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. 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. 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. Eliminate all ignition sources. Separate from oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c	5000 tonne	50000 tonne

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
2-ethylhexanoic acid, zirconium salt	Regulation on Limit Values - MAC (Austria, 4/2021). [Compounds of zirconium] TWA: 5 mg/m ³ , (measured as Zr) 8 hours. Form: Inhalable fraction
Cobalt bis(2-ethylhexanoate)	Regulation on Limit Values - Technical Guidance Values (Austria, 4/2021). [Cobalt and its compounds] Absorbed through skin. Skin sensitiser. Inhalation sensitiser. TWA: 0.1 mg/m ³ , (measured as Co) 8 hours. Form: Inhalable fraction PEAK: 0.4 mg/m ³ , (measured as Co), 4 times per shift, 15 minutes. Form: Inhalable fraction
2-ethylhexanoic acid, manganese salt	Regulation on Limit Values - MAC (Austria, 4/2021). [Manganese and its inorganic compounds] TWA: 0.2 mg/m ³ , (measured as Mn) 8 hours. Form: Inhalable fraction PEAK: 1.6 mg/m ³ , (measured as Mn), 4 times per shift, 15 minutes. Form: Inhalable fraction PEAK: 0.16 mg/m ³ , (measured as Mn), 4 times per shift, 15 minutes. Form: Respirable fraction TWA: 0.05 mg/m ³ , (measured as Mn) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	Limit values (Belgium, 5/2021). [Zirconium and compounds] TWA: 5 mg/m ³ , (as Zr) 8 hours. STEL: 10 mg/m ³ , (as Zr) 15 minutes.
2-ethylhexanoic acid, manganese salt	Limit values (Belgium, 5/2021). [Manganese and compounds] TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Limit values (Belgium, 5/2021). [Manganese, and inorganic compounds] TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: Respirable fraction
Cobalt bis(2-ethylhexanoate)	Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). [Cobalt and inorganic compounds (as cobalt)] Limit value 8 hours: 0.1 mg/m ³ , (as cobalt) 8 hours.
2-ethylhexanoic acid, manganese salt	Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). [Manganese oxide and inorganic compounds (as Manganese)] Limit value 8 hours: 0.2 mg/m ³ , (as Manganese) 8 hours. Form: Inhalable fraction Limit value 8 hours: 0.05 mg/m ³ , (as Manganese) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). [zirconium compounds] STELV: 10 mg/m ³ , (as Zr) 15 minutes. ELV: 5 mg/m ³ , (as Zr) 8 hours.
Cobalt bis(2-ethylhexanoate)	Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). [cobalt and compounds] Skin sensitiser. Inhalation sensitiser. ELV: 0.1 mg/m ³ , (as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). [manganese and its inorganic compounds] ELV: 0.05 mg/m ³ , (as Mn) 8 hours. Form: respiratory dust, a fraction that can reach the lungs by inhalation and inhalable fraction ELV: 0.2 mg/m ³ , (as Mn) 8 hours. Form: total dust, inhalable particles and the fraction that can reach the lungs by inhalation

SECTION 8: Exposure controls/personal protection

2-ethylhexanoic acid, manganese salt	Department of labour inspection (Cyprus, 7/2021). [Manganese and inorganic manganese compounds] TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Form: Inhalable fraction. TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: Respirable fraction
Cobalt bis(2-ethylhexanoate)	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). [Cobalt and its compounds] Skin sensitiser. TWA: 0.05 mg/m ³ , (as Co) 8 hours. Form: aerosol, inhalable fraction. STEL: 0.1 mg/m ³ , (as Co) 15 minutes. Form: aerosol, inhalable fraction.
2-ethylhexanoic acid, manganese salt	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). [Manganese and its compounds] STEL: 0.4 mg/m ³ , (as Mn) 15 minutes. Form: aerosol, inhalable fraction. TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Form: aerosol, inhalable fraction. TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: aerosol, respirable fraction. STEL: 0.1 mg/m ³ , (as Mn) 15 minutes. Form: aerosol, respirable fraction.
2-ethylhexanoic acid, zirconium salt	Working Environment Authority (Denmark, 6/2022). [Compounds of zirconium] TWA: 5 mg/m ³ , (calculated as Zr) 8 hours. STEL: 10 mg/m ³ , (calculated as Zr) 15 minutes.
Cobalt bis(2-ethylhexanoate)	Working Environment Authority (Denmark, 6/2022). [Inorganic compounds of cobalt] Carcinogen. TWA: 0.01 mg/m ³ , (calculated as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Working Environment Authority (Denmark, 6/2022). [Inorganic compounds of manganese] TWA: 0.2 mg/m ³ , (calculated as Mn) 8 hours. Form: inhalable TWA: 0.05 mg/m ³ , (calculated as Mn) 8 hours. Form: Respirable fraction
Cobalt bis(2-ethylhexanoate)	Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). [Cobalt and inorganic compounds] Skin sensitiser. TWA: 0.05 mg/m ³ , (calculated as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). [manganese and inorganic manganese compounds] TWA: 0.05 mg/m ³ , (calculated for manganese) 8 hours. Form: Respirable dust TWA: 0.2 mg/m ³ , (calculated for manganese) 8 hours. Form: Total dust
2-ethylhexanoic acid, manganese salt	EU OEL (Europe, 1/2022). [Manganese and inorganic manganese compounds] Notes: list of indicative occupational exposure limit values TWA: 0.2 mg/m ³ , ((as manganese)) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , ((as manganese)) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). [Zirconium and its compounds] TWA: 1 mg/m ³ , (calculated as Zr) 8 hours.
Cobalt bis(2-ethylhexanoate)	Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). [Cobalt and its inorganic compounds] TWA: 0.02 mg/m ³ , (calculated as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). [Manganese and its inorganic compounds] TWA: 0.2 mg/m ³ , (calculated as Mn) 8 hours. Form: inhalable dust TWA: 0.02 mg/m ³ , (calculated as Mn) 8 hours. Form: Respirable dust

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2-ethylhexanoic acid, manganese salt	Ministry of Labor (France, 10/2022). [manganese and its compounds] Notes: Indicative regulatory limit values (decree of 30-06-2004 modified) TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: Respirable fraction
Naphtha (petroleum), hydrotreated heavy	DFG MAC-values list (Germany, 7/2022). TWA: 50 ppm 8 hours. TWA: 300 mg/m ³ 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. PEAK: 600 mg/m ³ , 4 times per shift, 15 minutes.
Cobalt bis(2-ethylhexanoate)	DFG MAC-values list (Germany, 7/2022). [Cobalt and cobalt compounds (inhalable fraction)] Absorbed through skin. Skin sensitiser. Inhalation sensitiser.
2-ethylhexanoic acid, manganese salt	TRGS 900 OEL (Germany, 6/2022). [Manganese and its inorganic compounds] PEAK: 0.16 mg/m ³ 15 minutes. Form: Respirable fraction TWA: 0.02 mg/m ³ 8 hours. Form: Respirable fraction TWA: 0.2 mg/m ³ 8 hours. Form: Inhalable fraction PEAK: 1.6 mg/m ³ 15 minutes. Form: Inhalable fraction DFG MAC-values list (Germany, 7/2022). [Manganese and its inorganic compounds (inhalable fraction) / (respirable fraction)] TWA: 0.2 mg/m ³ 8 hours. Form: inhalable fraction PEAK: 1.6 mg/m ³ , 4 times per shift, 15 minutes. Form: inhalable fraction TWA: 0.02 mg/m ³ 8 hours. Form: respirable fraction PEAK: 0.16 mg/m ³ , 4 times per shift, 15 minutes. Form: respirable fraction
2-ethylhexanoic acid, zirconium salt	Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). [Zirconium and its compounds] TWA: 5 mg/m ³ 8 hours. STEL: 10 mg/m ³ 15 minutes.
Cobalt bis(2-ethylhexanoate)	Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). [Compounds of cobalt] TWA: 0.1 mg/m ³ , (as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). [manganese and its compounds] TWA: 0.2 mg/m ³ , (as manganese) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (as manganese) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). [Zirconium compounds] TWA: 5 mg/m ³ , (as Zr) 8 hours. PEAK: 20 mg/m ³ , (as Zr) 15 minutes.
Cobalt bis(2-ethylhexanoate)	5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). [Cobalt and its inorganic compounds] Skin sensitiser. Inhalation sensitiser. TWA: 0.02 mg/m ³ , (as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	EU OEL (Europe, 1/2022). [Manganese and inorganic manganese compounds] Notes: list of indicative occupational exposure limit values TWA: 0.2 mg/m ³ , ((as manganese)) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , ((as manganese)) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). [zirconium compounds] TWA: 5 mg/m ³ , (as Zr) 8 hours.
Cobalt bis(2-ethylhexanoate)	Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). [cobalt and its inorganic compounds] Skin sensitiser. TWA: 0.02 mg/m ³ , (as Co) 8 hours. Form: Dust and fumes
2-ethylhexanoic acid, manganese salt	Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). [manganese and its inorganic compounds]

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	<p>TWA: 0.05 mg/m³, (as Mn) 8 hours. Form: percentage of exhaled air.</p> <p>TWA: 0.2 mg/m³, (as Mn) 8 hours. Form: percentage of inhaled air.</p>
2-ethylhexanoic acid, zirconium salt	<p>NAOSH (Ireland, 5/2021). [zirconium compounds as Zr] Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV-8hr: 5 mg/m³, (as Zr) 8 hours. OELV-15min: 10 mg/m³, (as Zr) 15 minutes.</p>
Cobalt bis(2-ethylhexanoate)	<p>NAOSH (Ireland, 5/2021). [Cobalt and cobalt compounds as Co] Sensitization potential. Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV-8hr: 0.02 mg/m³, (as Co) 8 hours.</p>
2-ethylhexanoic acid, manganese salt	<p>NAOSH (Ireland, 5/2021). [manganese and inorganic manganese compounds as Mn] Notes: EU derived Occupational Exposure Limit Values OELV-8hr: 0.2 mg/m³, (as Mn) 8 hours. Form: Inhalable fraction OELV-8hr: 0.05 mg/m³, (as Mn) 8 hours. Form: respirable fraction</p>
2-ethylhexanoic acid, manganese salt	<p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). [Manganese and its inorganic compounds] 8 hours: 0.2 mg/m³, (as Mn) 8 hours. Form: inhalable fraction 8 hours: 0.05 mg/m³, (as Mn) 8 hours. Form: respirable fraction</p>
2-ethylhexanoic acid, manganese salt	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). [manganese and its inorganic compounds] TWA: 0.2 mg/m³, (as manganese) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m³, (as manganese) 8 hours. Form: respirable fraction</p>
Cobalt bis(2-ethylhexanoate)	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). [Cobalt and its inorganic compounds] Skin sensitiser. Inhalation sensitiser. TWA: 0.05 mg/m³, (as Co) 8 hours.</p>
2-ethylhexanoic acid, manganese salt	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). [Manganese and its inorganic compounds] TWA: 0.05 mg/m³, (as Mn) 8 hours. Form: Respirable fraction TWA: 0.2 mg/m³, (as Mn) 8 hours. Form: Inhalable fraction</p>
2-ethylhexanoic acid, manganese salt	<p>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). [manganese and its inorganic compounds] TWA: 0.2 mg/m³, (as manganese) 8 hours. Form: inhalable fraction TWA: 0.05 mg/m³, (as manganese) 8 hours. Form: respirable fraction</p>
2-ethylhexanoic acid, manganese salt	<p>EU OEL (Europe, 1/2022). [Manganese and inorganic manganese compounds] Notes: list of indicative occupational exposure limit values TWA: 0.2 mg/m³, ((as manganese)) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m³, ((as manganese)) 8 hours. Form: Respirable fraction</p>
2-ethylhexanoic acid, manganese salt	<p>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022). [manganese and inorganic manganese compounds (as manganese)] OEL, 8-h TWA: 0.2 mg/m³, (as manganese) 8 hours. Form: inhalable STEL, 15-min: 0.05 mg/m³, (as manganese) 15 minutes. Form: respirable</p>

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2-ethylhexanoic acid, zirconium salt	FOR-2011-12-06-1358 (Norway, 12/2022). [Zirconium compounds] TWA: 5 mg/m ³ , (calculated as Zr) 8 hours.
Cobalt bis(2-ethylhexanoate)	FOR-2011-12-06-1358 (Norway, 12/2022). [Inorganic cobalt compounds (except Co(II))] Skin sensitiser. Reproductive toxin. TWA: 0.02 mg/m ³ , (calculated as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	FOR-2011-12-06-1358 (Norway, 12/2022). [Manganese and inorganic manganese compounds] Notes: indicative limit value TWA: 0.2 mg/m ³ , (calculated as Mn) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (calculated as Mn) 8 hours. Form: Respirable fraction
Naphtha (petroleum), hydrotreated heavy	Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [benzin to varnish] TWA: 300 mg/m ³ 8 hours. STEL: 900 mg/m ³ 15 minutes.
Naphtha (petroleum), hydrotreated light	Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [benzin extraction] TWA: 500 mg/m ³ 8 hours. STEL: 1500 mg/m ³ 15 minutes.
2-ethylhexanoic acid, zirconium salt	Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [zirconium and compounds as Zr] TWA: 5 mg/m ³ , (calculated as Zr) 8 hours. STEL: 10 mg/m ³ , (calculated as Zr) 15 minutes.
Cobalt bis(2-ethylhexanoate)	Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [cobalt and its inorganic compounds] TWA: 0.02 mg/m ³ , (calculated as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [manganese and inorganic compounds as Mn; inhalable fraction; respirable fraction] TWA: 0.2 mg/m ³ , (calculated as Mn) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (calculated as Mn) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	Portuguese Institute of Quality (Portugal, 11/2014). [Zirconium compounds] TWA: 5 mg/m ³ , (expressed as Zr) 8 hours. STEL: 10 mg/m ³ , (expressed as Zr) 15 minutes.
Cobalt bis(2-ethylhexanoate)	Portuguese Institute of Quality (Portugal, 11/2014). [cobalt and inorganic compounds] TWA: 0.02 mg/m ³ , (expressed as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Portuguese Institute of Quality (Portugal, 11/2014). [Manganese and inorganic compounds] TWA: 0.1 mg/m ³ , (expressed as Mn) 8 hours. Form: Inhalable fraction TWA: 0.02 mg/m ³ , (expressed as Mn) 8 hours. Form: Respirable

SECTION 8: Exposure controls/personal protection

2-ethylhexanoic acid, zirconium salt	fraction HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2021). [Zirconium and compounds] VLA: 5 mg/m ³ , (expressed as Zr) 8 hours. Short term: 10 mg/m ³ , (expressed as Zr) 15 minutes.
2-ethylhexanoic acid, manganese salt	HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2021). [Manganese and inorganic manganese compounds] VLA: 0.2 mg/m ³ , (expressed in Mn) 8 hours. Form: Inhalable fraction VLA: 0.05 mg/m ³ , (expressed in Mn) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	Government regulation SR c. 355/2006 (Slovakia, 9/2020). [Zirconium and its compounds] TWA: 1 mg/m ³ , (Zirconium and its compounds, as Zr) 8 hours.
Cobalt bis(2-ethylhexanoate)	Government regulation SR c. 355/2006 (Slovakia, 9/2020). [Cobalt and its compounds] Skin sensitiser. TWA: 0.05 mg/m ³ , (Cobalt and its compounds, as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	Government regulation SR c. 355/2006 (Slovakia, 9/2020). [Manganese and its inorganic compounds] TWA: 0.2 mg/m ³ , (Manganese and its inorganic compounds, as manganese) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (Manganese and its inorganic compounds, as manganese) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021). [zirconium, water insoluble compounds] TWA: 1 mg/m ³ 8 hours. Form: Inhalable fraction KTV: 1 mg/m ³ , 4 times per shift, 15 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, 5/2021). [manganese and its inorganic compounds] TWA: 0.2 mg/m ³ , ((calculated as Manganese)) 8 hours. Form: Inhalable fraction KTV: 1.6 mg/m ³ , ((calculated as Manganese)), 4 times per shift, 15 minutes. Form: Inhalable fraction KTV: 0.4 mg/m ³ , ((calculated as Manganese)), 4 times per shift, 15 minutes. Form: Respirable fraction TWA: 0.05 mg/m ³ , ((calculated as Manganese)) 8 hours. Form: Respirable fraction
2-ethylhexanoic acid, zirconium salt	National institute of occupational safety and health (Spain, 4/2022). [Compounds of zirconium] TWA: 5 mg/m ³ , (as Zr) 8 hours. STEL: 10 mg/m ³ , (as Zr) 15 minutes.
Cobalt bis(2-ethylhexanoate)	National institute of occupational safety and health (Spain, 4/2022). [Inorganic compounds of cobalt, except those expressly stated] Skin sensitiser. Inhalation sensitiser. TWA: 0.02 mg/m ³ , (as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	National institute of occupational safety and health (Spain, 4/2022). [Manganese elemental and inorganic compounds of manganese] TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: Respirable fraction
Cobalt bis(2-ethylhexanoate)	Work environment authority Regulation 2018:1 (Sweden, 9/2021). [cobalt and inorganic compounds inhalable fraction, (as Co)] Absorbed through skin. Skin sensitiser. TWA: 0.02 mg/m ³ , (as Co) 8 hours. Form: inhalable fraction
2-ethylhexanoic acid, manganese salt	Work environment authority Regulation 2018:1 (Sweden, 9/2021). [inorganic compounds of manganese inhalable fraction / respirable fraction, (as Mn)] TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Form: inhalable fraction TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: respirable fraction

SECTION 8: Exposure controls/personal protection

Naphtha (petroleum), hydrotreated heavy	SUVA (Switzerland, 1/2023). STEL: 600 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 50 ppm 8 hours. TWA: 300 mg/m ³ 8 hours.
Naphtha (petroleum), hydrotreated light	SUVA (Switzerland, 1/2023). TWA: 500 ppm 8 hours. TWA: 2000 mg/m ³ 8 hours.
2-ethylhexanoic acid, zirconium salt	SUVA (Switzerland, 1/2023). [zirconium and its insoluble compounds (except ZrO₂ and ZrCl₄)] TWA: 5 mg/m ³ , (calculated as Zr) 8 hours. Form: Inhalable fraction STEL: 10 mg/m ³ , (calculated as Zr) 15 minutes. Form: Inhalable fraction
Cobalt bis(2-ethylhexanoate)	SUVA (Switzerland, 1/2023). [Cobalt and its compounds] Absorbed through skin. Skin sensitiser. TWA: 0.05 mg/m ³ , (calculated as Co) 8 hours. Form: inhalable dust and aerosol
2-ethylhexanoic acid, manganese salt	SUVA (Switzerland, 1/2023). [Manganese and its inorg. compounds] TWA: 0.1 mg/m ³ , (calculated as Mn) 8 hours. Form: Respirable fraction TWA: 0.2 mg/m ³ , (calculated as Mn) 8 hours. Form: Inhalable fraction
2-ethylhexanoic acid, zirconium salt	EH40/2005 WELs (United Kingdom (UK), 1/2020). [zirconium compounds as Zr] STEL: 10 mg/m ³ , (as Zr) 15 minutes. TWA: 5 mg/m ³ , (as Zr) 8 hours.
Cobalt bis(2-ethylhexanoate)	EH40/2005 WELs (United Kingdom (UK), 1/2020). [cobalt and cobalt compounds as Co] Inhalation sensitiser. TWA: 0.1 mg/m ³ , (as Co) 8 hours.
2-ethylhexanoic acid, manganese salt	EH40/2005 WELs (United Kingdom (UK), 1/2020). [manganese and its inorganic compounds inhalable fraction/respirable fraction, as Mn] TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: Respirable fraction

Biological exposure indices

Product/ingredient name	Exposure indices
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.
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.
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.
No exposure indices known.	

SECTION 8: Exposure controls/personal protection

Cobalt bis(2-ethylhexanoate)	<p>DFG BEI-values list (Germany, 7/2022) [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.</p>
2-ethylhexanoic acid, manganese salt	<p>DFG BEI-values list (Germany, 7/2022) [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.</p>
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.	
No exposure indices known.	
No exposure indices known.	
Cobalt bis(2-ethylhexanoate)	<p>HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2020) [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.</p>
2-ethylhexanoic acid, manganese salt	<p>HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2020) [Manganese compounds] OBLV: 10 µg/l, manganese [in urine]. Sampling time: end of shift.</p>
Cobalt bis(2-ethylhexanoate)	<p>Government regulation SR c. 355/2006 (Slovakia, 9/2020) [cobalt and its compounds] BLV: 38.45 nmol/mmol creatinine, cobalt [in urine]. Sampling time: no limitation. BLV: 20.03 µg/g creatinine, cobalt [in urine]. Sampling time: no limitation. BLV: 509.8 nmol/l, cobalt [in urine]. Sampling time: no limitation. BLV: 30 µg/l, cobalt [in urine]. Sampling time: no limitation.</p>
No exposure indices known.	
Cobalt bis(2-ethylhexanoate)	<p>National institute of occupational safety and health (Spain, 4/2022) [cobalt and inorganic compounds 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.</p>
No exposure indices known.	

SECTION 8: Exposure controls/personal protection

Cobalt bis(2-ethylhexanoate)	<p>SUVA (Switzerland, 1/2023) [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.</p>
2-ethylhexanoic acid, manganese salt	<p>SUVA (Switzerland, 1/2023) [Manganese and its inorganic compounds] BEI: 20 µg/l, manganese [in blood]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift. BEI: 364 nmol/l, manganese [in blood]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.</p>
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
Naphtha (petroleum), hydrotreated heavy	DNEL	Long term Inhalation	0.41 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	1.9 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	178.57 mg/m ³	General population	Local
	DNEL	Long term Oral	300 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	300 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	300 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	640 mg/m ³	General population	Local
	DNEL	Long term Inhalation	837.5 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	1066.67 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	1152 mg/m ³	General population	Systemic
Naphtha (petroleum), hydrotreated light	DNEL	Short term Inhalation	1286.4 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	0.41 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	1.9 mg/m ³	Workers	Systemic
	DNEL	Long term Oral	149 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	149 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	178.57 mg/m ³	General population	Local
	DNEL	Short term Inhalation	640 mg/m ³	General population	Local
	DNEL	Long term Inhalation	837.5 mg/m ³	Workers	Local

SECTION 8: Exposure controls/personal protection

2-ethylhexanoic acid, zirconium salt	DNEL	Short term Inhalation	1066.67 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	1152 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	1286.4 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	300 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	2.5 mg/m ³	General population	Systemic
	DNEL	Long term Oral	2.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	3.25 mg/kg bw/day	General population	Systemic
Cobalt bis(2-ethylhexanoate)	DNEL	Long term Inhalation	5 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	6.49 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	37 µg/m ³	General population	Local
	DNEL	Long term Oral	175 µg/kg bw/day	General population	Systemic
2-ethylhexanoic acid, manganese salt	DNEL	Long term Inhalation	235.1 µg/m ³	Workers	Local
	DNEL	Long term Oral	0.167 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.0021 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.00414 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.043 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	1.19 mg/m ³	Workers	Systemic

PNECs

No PNECs available

8.2 Exposure controls

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, vapour 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

: 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

SECTION 8: Exposure controls/personal 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. 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.
- 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** : Colourless.
- Odour** : Slight
- Odour threshold** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** :

Ingredient name	°C	°F	Method
Naphtha (petroleum), hydrotreated heavy	155 to 217	311 to 422.6	

- Flammability** : Not available.
- Lower and upper explosion limit** : Lower: 1.05%
Upper: 7.6%
- Flash point** : Closed cup: 9°C (48.2°F)
- Auto-ignition temperature** :

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

- Decomposition temperature** : Not available.

SECTION 9: Physical and chemical properties

pH : Not applicable.

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
Naphtha (petroleum), hydrotreated heavy	0.75006 to 2.25018	0.1 to 0.3				

Relative density : Not available.

Density : 1 g/cm³

Vapour density : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Particle characteristics

Median particle size : 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 : Avoid all possible sources of ignition (spark or flame). Do not pressurise, 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:
oxidising 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
Naphtha (petroleum), hydrotreated heavy	LC50 Inhalation Vapour	Rat	8500 mg/m ³	4 hours
	LD50 Oral	Rat	>6 g/kg	-
2-ethylhexanoic acid, zirconium salt	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	>5 g/kg	-
Cobalt bis(2-ethylhexanoate)	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	1.22 g/kg	-

Date of issue/Date of revision : 17/05/2024 **Date of previous issue** : No previous validation **Version** : 1 **17/27**

HARTÖL 1394-50 - All variants

Label No : 51800

SECTION 11: Toxicological information

Conclusion/Summary : Based on available data, the classification criteria are not met.

Acute toxicity estimates

Route	ATE value
Not available.	

Irritation/Corrosion

Conclusion/Summary : Based on available data, the classification criteria are not met.

Sensitisation

Conclusion/Summary : May cause an allergic skin reaction.

Mutagenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Conclusion/Summary : May damage the unborn child.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Naphtha (petroleum), hydrotreated heavy	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2-ethylhexanoic acid, manganese salt	Category 2	-	-

Aspiration hazard

Product/ingredient name	Result
Naphtha (petroleum), hydrotreated heavy Naphtha (petroleum), hydrotreated light	ASPIRATION HAZARD - Category 1 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 : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : May cause an allergic skin reaction.

Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced foetal weight
increase in foetal deaths
skeletal malformations

SECTION 11: Toxicological information

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
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** : 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** : May damage the unborn child.

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

- Conclusion/Summary** : Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

- Conclusion/Summary** : This product has not been tested for biodegradation.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Naphtha (petroleum), hydrotreated heavy	-	10 to 2500	High
Naphtha (petroleum), hydrotreated light	2.2 to 5.2	10 to 2500	High
2-ethylhexanoic acid, zirconium salt	-	2.96	Low
Cobalt bis(2-ethylhexanoate)	-	15600	High
2-ethylhexanoic acid, manganese salt	-	2.96	Low

SECTION 12: Ecological information

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : 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

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. Vapour 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 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	UN1993	UN1993	UN1993	UN1993
14.2 UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated heavy)	FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated heavy, Naphtha (petroleum), hydrotreated light)	FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated heavy)	FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated heavy)
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	II	II	II	II

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14.5 Environmental hazards	No.	Yes.	No.	No.
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Additional information

- ADR/RID** : **Special provisions** 640 (C)
Tunnel code (D/E)
- ADN** : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.
Special provisions 640 (C)

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 1394-50	≥90	3 30
2-ethylhexanoic acid, zirconium salt	≤1	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 (1005/2009/EU)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

SECTION 15: Regulatory information

Category

P5c

National regulations

Austria

VbF class : A I
Very dangerous flammable liquid.

Limitation of the use of organic solvents : Permitted.

Czech Republic

Storage code : I

Denmark

Danish fire class : I-1

Executive Order No. 1795/2015

Ingredient name	Annex I Section A	Annex I Section B
Cobalt bis(2-ethylhexanoate)	Listed	-

MAL-code : 2-1

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: 2-1

Application: When using scraper or knife, brush, roller, etc, for pre- and post-treatments in cabins or booths of the existing* facility type, if the operator is inside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin.

- Gas filter mask must be worn.

When spraying in existing* spray booths, if the operator is outside the spray zone.

- Air-supplied half mask, arm protectors and eye protection 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. During downtimes, cleaning and repair in closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.

- Air-supplied half mask and eye protection 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.

- Air-supplied half mask, eye protection, coveralls and hood must be worn.

SECTION 15: Regulatory information

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

Carcinogenic waste : Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.

Finland

France

Social Security Code, Articles L 461-1 to L 461-7 : Naphtha (petroleum), hydrotreated heavy RG 84
Naphtha (petroleum), hydrotreated light RG 84
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

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

Storage class (TRGS 510) : 3

Hazardous incident ordinance

This product is controlled under the Germany Hazardous Incident Ordinance.

Danger criteria

Category	Reference number
P5c	1.2.5.3

Hazard class for water : 3

Technical instruction on air quality control : TA-Luft Number 5.2.5: 98.6%
TA-Luft Class II - Number 5.2.7.1.1: 0.6%
TA-Luft Class I - Number 5.2.5: 0.4%
TA-Luft Class I - Number 5.2.7.1.1: 0.2%
TA-Luft Class III - Number 5.2.2: 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

SECTION 15: Regulatory information

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development	Harmful via breastfeeding
Naphtha (petroleum), hydrotreated heavy	Listed	Listed	-	-	-
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 and salts excluding substances specifically listed in Annex VI of CLP	-	-	-	Development 1B	-
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) : 1

Switzerland

VOC content : VOC (w/w): 52.6%

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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
Flam. Liq. 2, H225	On basis of test data
Skin Sens. 1, H317	Calculation method
Repr. 1B, H360D	Calculation method
STOT SE 3, H336	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
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.
EUH066	Repeated exposure may cause skin dryness or cracking.

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. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Skin Sens. 1	SKIN SENSITISATION - Category 1
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

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All variants

Notice to reader

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SECTION 16: Other information

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.

