Safety Data Sheet
Hempel's Silvium

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758 - United Kingdom (UK)

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

1.1 Product identifier

Product name : Hempel's Silvium

Product identity : 5157019000, 00138095

Product type : aluminium paint

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

Field of application : buildings , metal industry, ships and shipyards.

Identified uses : Industrial applications, Professional applications, Used by spraying.

1.3 Details of the supplier of the safety data sheet

Company details :

Hempel UK Ltd
Berwyn House, The Pavilions
Llantarnam Park
Cwmbran
South Wales NP44 3FD
Telephone: 01633 833600
hempel@hempel.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation)

UK: **01633 833600** (08.00 - 17.00)
Ireland: **01 809 2166** (National Poisons Information Centre, Monday-Sunday; 08:00-22:00)

See Section 4 of the safety data sheet (first aid measures).

Date of issue : 17 January 2024

Date of previous issue : 22 December 2022.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to UK CLP/GHS

Flam. Liq. 3, H226	FLAMMABLE LIQUIDS
Carc. 1B, H350	CARCINOGENICITY
STOT SE 3, H336	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects)
STOT RE 1, H372	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE
Aquatic Chronic 2, H411	LONG-TERM (CHRONIC) AQUATIC HAZARD

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

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :

H226 - Flammable liquid and vapour.
H336 - May cause drowsiness or dizziness.
H350 - May cause cancer.
H372 - Causes damage to organs through prolonged or repeated exposure.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention : Obtain special instructions before use. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Do not breathe vapor, mist or spray.

Response : Collect spillage. IF exposed or concerned: Get medical advice or attention.

Store in a well-ventilated place. Keep container tightly closed.

Hazardous ingredients : hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)
white spirit
2-butanone oxime

Supplemental label elements : Repeated exposure may cause skin dryness or cracking.
Contains 2-butanone oxime and cobalt bis(2-ethylhexanoate). May produce an allergic reaction.
Restricted to professional users.

SECTION 2: Hazards identification

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

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

Product/ingredient name	Identifiers	%	GB CLP Classification	Type
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	REACH #: 01-2119458049-33 EC: 265-185-4 CAS: 64742-82-1 Index: 649-405-00-X	≥25 - ≤50	Flam. Liq. 3, H226 STOT SE 3, H336 STOT RE 1, H372 (central nervous system (CNS)) (inhalation) Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	[1] [2]
white spirit	REACH #: 01-2119458049-33 EC: 265-191-7 CAS: 64742-88-7 Index: 649-405-00-X	≥10 - ≤25	Flam. Liq. 3, H226 STOT SE 3, H336 STOT RE 1, H372 (central nervous system (CNS)) (inhalation) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1] [2]
Solvent naphtha (petroleum), light arom.	REACH #: 01-2119455851-35 EC: 918-668-5 CAS: 64742-95-6	≤10	Flam. Liq. 3, H226 STOT SE 3, H335 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	[1] [2]
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	REACH #: 01-2119463258-33 EC: 265-150-3 CAS: 64742-48-9 Index: 649-327-00-6	≤5	Flam. Liq. 3, H226 STOT SE 3, H336 Asp. Tox. 1, H304 EUH066	[1]
styrene	REACH #: 01-2119457861-32 EC: 202-851-5 CAS: 100-42-5 Index: 601-026-00-0	<1	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT SE 3, H335 STOT RE 1, H372 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
2-butanone oxime	REACH #: 01-2119539477-28 EC: 202-496-6 CAS: 96-29-7 Index: 616-014-00-0	<1	Acute Tox. 3, H301 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1B, H350 STOT SE 1, H370 (upper respiratory tract) STOT SE 3, H336 STOT RE 2, H373 (blood system)	[1]
cobalt bis(2-ethylhexanoate)	REACH #: 01-2119524678-29 EC: 205-250-6 CAS: 136-52-7	<0.1	Eye Irrit. 2, H319 Skin Sens. 1A, H317 Repr. 1B, H360F Aquatic Acute 1, H400 (M=1) Aquatic Chronic 3, H412	[1] [2]

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

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit, see section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

General :	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 112 and give immediate treatment (first aid).
Eye contact :	Check for and remove any contact lenses. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. In all cases of doubt, or when symptoms persist, seek medical attention.
Inhalation :	Remove to fresh air and keep at rest in a position comfortable for breathing. Give nothing by mouth. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately.
Skin contact :	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
Ingestion :	If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.
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

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 :	Defatting to the skin. May cause skin dryness and irritation.
Ingestion :	Can cause central nervous system (CNS) depression.

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
Skin contact :	Adverse symptoms may include the following: irritation dryness cracking
Ingestion :	No specific data.

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

Extinguishing media :	Recommended: alcohol resistant foam, CO_2, powders, water spray. Not to be used : waterjet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	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 toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products :	Decomposition products may include the following materials: carbon oxides metal oxide/oxides

SECTION 5: Firefighting measures

5.3 Advice for firefighters

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. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. 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

Avoid all direct contact with the spilled material. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

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

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. 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

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used.
Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	**EU OEL (Europe, 2000).** TWA: 25 ppm 8 hours. TWA: 145 mg/m³ 8 hours.
white spirit	**EU OEL (Europe).** (ACGIH) TWA: 25 ppm 8 hours. (ACGIH) TWA: 145 mg/m³ 8 hours.
Solvent naphtha (petroleum), light arom.	**EU OEL (Europe).** TWA: 120 mg/m³ 8 hours. Form: Tentativ TWA: 25 ppm 8 hours. Form: Tentativ
styrene	**EH40/2005 WELs (United Kingdom (UK), 1/2020).** STEL: 250 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 430 mg/m³ 8 hours. STEL: 1080 mg/m³ 15 minutes.
cobalt bis(2-ethylhexanoate)	**EH40/2005 WELs (United Kingdom (UK), 1/2020). [cobalt and cobalt compounds] Inhalation sensitiser.** TWA: 0.1 mg/m³, (as Co) 8 hours.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to 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.

Derived effect levels

Product/ingredient name	Type	Exposure	Value	Population	Effects
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	DNEL	Long term Dermal	21 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	330 mg/m³	Workers	Systemic
white spirit	DNEL	Long term Dermal	21 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	330 mg/m³	Workers	Systemic
Solvent naphtha (petroleum), light arom.	DNEL	Long term Dermal	25 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	150 mg/m³	Workers	Systemic
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	DNEL	Long term Inhalation	1500 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	300 mg/kg bw/day	Workers	Systemic
styrene	DNEL	Long term Inhalation	85 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	406 mg/kg	Workers	Systemic
2-butanone oxime	DNEL	Long term Inhalation	9 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	1.3 mg/kg bw/day	Workers	Systemic

Predicted effect concentrations

Product/ingredient name	Compartment Detail	Value	Method Detail
styrene	Fresh water	0.028 mg/l	-
	Marine water	0.014 mg/l	-
	Fresh water sediment	0.614 mg/kg	-
	Marine water sediment	0.307 mg/kg	-
	Sewage Treatment Plant	5 mg/l	-
	Soil	0.2 mg/kg	-
cobalt bis(2-ethylhexanoate)	Sewage Treatment Plant	0.37 mg/l	-
	Fresh water	0.62 µg/l	-
	Marine water	2.36 µg/l	-
	Fresh water sediment	53.8 mg/kg dwt	-
	Marine water sediment	69.8 mg/kg dwt	-
	Soil	10.9 mg/kg dwt	-

8.2 Exposure controls

Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Individual protection measures

SECTION 8: Exposure controls/personal protection

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. Safety eyewear should be used when there is a likelihood of exposure.
Hygiene measures :	Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.
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.
Hand protection :	Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances. Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice: Recommended: Silver Shield / Barrier / 4H gloves, nitrile rubber, polyvinyl alcohol (PVA), Viton® Short term exposure: neoprene rubber, butyl rubber, natural rubber (latex), polyvinyl chloride (PVC)
Body protection :	Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product. Wear suitable protective clothing. Always wear protective clothing when spraying.
Respiratory protection :	When the product is applied by spraying and for continuous or prolonged work always wear an air-fed respirator e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. Be sure to use an approved/certified respirator or equivalent.

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

9.1 Information on basic physical and chemical properties

Physical state :	Liquid.
Colour :	Grey.
Odour :	Solvent-like
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	Testing not relevant or not possible due to nature of the product.
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 38°C (100.4°F)
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidising materials. Slightly flammable in the presence of the following materials or conditions: reducing materials and alkalis.
Lower and upper explosive (flammable) limits :	0.6 - 7.6 vol %
Vapour pressure :	Testing not relevant or not possible due to nature of the product.
Vapour density :	Testing not relevant or not possible due to nature of the product.
Specific gravity :	0.93 g/cm³
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Lowest known value: >220°C (>428°F) (white spirit).
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Aspiration hazard (H304) Not classified. Testing not relevant due to nature of the product.

SECTION 9: Physical and chemical properties

Explosive properties :	Explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidising materials. Slightly explosive in the presence of the following materials or conditions: reducing materials and moisture.
Oxidising properties :	Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight :	Weighted average: 53 %
Water % by weight :	Weighted average: 0 %
VOC content :	478 g/l (Measured)
Solvent Gas :	Weighted average: 0.096 m³/l

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

Highly reactive or incompatible with the following materials: oxidising materials and acids.
Reactive or incompatible with the following materials: reducing materials, organic materials and moisture.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides metal oxide/oxides

SECTION 11: Toxicological information

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

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Solvent naphtha (petroleum), light arom.	LC50 Inhalation Vapour	Rat	6193 mg/m³	4 hours
	LD50 Dermal	Rabbit	3160 mg/kg	-
	LD50 Oral	Rat	3492 mg/kg	-
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	LD50 Oral	Rat	>2000 mg/kg	-
styrene	LC50 Inhalation Gas.	Rat	2770 ppm	4 hours
	LC50 Inhalation Vapour	Rat	11800 mg/m³	4 hours
	LD50 Oral	Rat	2650 mg/kg	-
2-butanone oxime	LD50 Dermal	Rabbit	1001 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
cobalt bis(2-ethylhexanoate)	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	3129 mg/kg	-

Acute toxicity estimates

SECTION 11: Toxicological information

Product/ingredient name	Oral mg/kg	Dermal mg/kg	Inhalation (gases) ppm	Inhalation (vapours) mg/l	Inhalation (dusts and mists) mg/l
Hempel's Silvium	33361.1				
Solvent naphtha (petroleum), light arom.	3492	3160			
styrene	2650			11.8	
2-butanone oxime	100	1100			
cobalt bis(2-ethylhexanoate)	3129				

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
Solvent naphtha (petroleum), light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 microliters
	Respiratory - Mild irritant	Rabbit	-	-
	Skin - Moderate irritant	Rabbit	-	-
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	Eyes - Mild irritant	Rabbit	-	-
styrene	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams
	Skin - Irritant	Rabbit	-	-
2-butanone oxime	Eyes - Severe irritant	Rabbit	-	100 microliters

Sensitiser

Product/ingredient name	Route of exposure	Species	Result
cobalt bis(2-ethylhexanoate)	skin	Mouse	Sensitising

Mutagenic effects

No known significant effects or critical hazards.

Carcinogenicity

May cause cancer. Risk of cancer depends on duration and level of exposure.

Reproductive toxicity

No known significant effects or critical hazards.

Teratogenic effects

No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	Category 3		Narcotic effects
white spirit	Category 3		Narcotic effects
Solvent naphtha (petroleum), light arom.	Category 3		Respiratory tract irritation
	Category 3		Narcotic effects
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	Category 3		Narcotic effects
styrene	Category 3		Respiratory tract irritation
2-butanone oxime	Category 1		upper respiratory tract
	Category 3		Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	Category 1	inhalation	central nervous system (CNS)
white spirit	Category 1	inhalation	central nervous system (CNS)
styrene	Category 1	-	hearing organs
2-butanone oxime	Category 2	-	blood system

Aspiration hazard

SECTION 11: Toxicological information

Product/ingredient name	Result
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	ASPIRATION HAZARD - Category 1
white spirit	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	ASPIRATION HAZARD - Category 1
styrene	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

No known significant effects or critical hazards.

Sensitisation : Contains 2-butanone oxime. May produce an allergic reaction.

11.2 Information on other hazards

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Toxic to aquatic life with long lasting effects.

Product/ingredient name	Result	Species	Exposure
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	Chronic EC50 4.6 - 10 mg/l	Algae	72 hours
	Chronic EC50 10 - 20 mg/l	Daphnia	48 hours
	Chronic EC50 10 - 30 mg/l	Fish	96 hours
white spirit	Acute EC50 4.6 - 10 mg/l	Algae	72 hours
	Acute EC50 10 - 20 mg/l	Daphnia	48 hours
	Acute EC50 10 - 30 mg/l	Fish	96 hours
Solvent naphtha (petroleum), light arom.	Acute EC50 2.6 mg/l	Algae - Pseudokirchneriella subcapitata (green algae)	96 hours
	Acute EC50 3.2 mg/l	Daphnia	48 hours
	Acute LC50 9.22 mg/l	Fish - Oncorhynchus mykiss (rainbow trout)	96 hours
styrene	Chronic NOEC 63 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
cobalt bis(2-ethylhexanoate)	Acute LC50 0.1 - 1 mg/l	Fish	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	OECD 301F Ready Biodegradability - Manometric Respirometry Test	74.7 % - Readily - 28 days	-	-
white spirit	301F Ready Biodegradability - Manometric Respirometry Test	7 - 74 % - Readily - 28 days	-	-
Solvent naphtha (petroleum), light arom.	OECD 301F Ready Biodegradability - Manometric Respirometry Test	78 % - Readily - 28 days	-	-
	-	>70 % - Readily - 28 days	-	-
	-	>60 % - Readily - 28 days	-	-
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	OECD 301F Ready Biodegradability - Manometric Respirometry Test	80 % - Readily - 28 days	-	-
styrene	-	70.9 % - Readily - 28 days	-	-
	-	>60 % - Readily - 10 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	-	-	Readily
white spirit	-	-	Readily
Solvent naphtha (petroleum), light arom.	-	-	Readily
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	-	-	Readily
styrene	-	-	Readily

SECTION 12: Ecological information

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	-	10 - 2500	high
white spirit	3 - 7.3	-	high
Solvent naphtha (petroleum), light arom.	-	10 - 2500	high
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	5 - 6.7	10 - 2500	high
styrene	2.96	13.49	low
2-butanone oxime	0.63	2.5 - 5.8	low
cobalt bis(2-ethylhexanoate)	-	15600	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : No known data avaliable in our database.

Mobility : No known data avaliable in our database.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.							

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The generation of waste should be avoided or minimised wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

European waste catalogue no. (EWC) is given below.

European waste catalogue (EWC) : 08 01 11*

Packaging

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.

SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN / ID no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
ADR/RID Class	UN1263	PAINT	3 	III	Yes.	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Tunnel code** (D/E)
IMDG Class	UN1263	PAINT. (hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%))	3 	III	Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-E, S-E
IATA Class	UN1263	PAINT	3 	III	Yes.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

SECTION 14: Transport information

PG* : Packing group
Env.* : Environmental hazards

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 applicable.

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 - Substances of very high concern

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

Restricted to professional users.

Other EU regulations

Seveso category This product is controlled under the Seveso III Directive.

Seveso category
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E2: Hazardous to the aquatic environment - Chronic 2

National regulations Non-GHS

List name	Product/ingredient name	Name on list	Classification	Notes
UK Occupational Exposure Limits EH40 - WEL	cobalt bis(2-ethylhexanoate)	cobalt and cobalt compounds as Co	Carc.	-

15.2 Chemical safety assessment

SECTION 16: Other information

Abbreviations and acronyms :
ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
EUH statement = CLP-specific Hazard statement
RRN = REACH Registration Number
DNEL = Derived No Effect Level
PNEC = Predicted No Effect Concentration

Full text of abbreviated H statements :

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H360F	May damage fertility.
H361d	Suspected of damaging the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
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.

SECTION 16: Other information

Full text of classifications [CLP/GHS] :

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
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
Carc. 1B	CARCINOGENICITY - Category 1B
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - 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
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 1	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

Classification	Justification
FLAMMABLE LIQUIDS	On basis of test data
CARCINOGENICITY	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects)	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD	Calculation method

Notice to reader

Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical preformance or suitability for particular applications.
It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.

Safe Use of Mixture Information

Hempel's Silvium

This document is intended to communicate the conditions of safe use for the product and should always be read in combination with the product's Safety Data Sheet and labels.

General description of the process covered

Indoor or outdoor spray painting by professionals for specialist applications, with good general room ventilation plus respiratory protection

This safe use information is linked to : Professional spray painting, near-industrial setting
Priority

Sector(s) of use : Industrial uses - Professional uses

Product category(ies) : Coatings and paints, thinners, paint removers

Operational conditions

Place of use : Indoor or outdoor use

Range of application/Process conditions : Assumes a good standard of occupational hygiene and safety management has been implemented. Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Others : Depending on actual conditions of application. Please consult your local HEMPEL representative for further advise.

Risk management measures (RMM)

Contributing activity	Process category (ies)	Maximum duration	Ventilation		Respiratory	Eye	Hands
			Type and air changes per hour				
Preparation of material for application	PROC05	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Loading of application equipment and handling of coated parts before curing	PROC08b	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Industrial application of coatings by spraying	PROC07	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Use a properly fitted, air-purifying or air-fed respirator. EN 14594 with an assigned protection factor of at least 20.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Film formation - force drying, stoving and other technologies	PROC04	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	None	Use eye protection according to EN 166.	Wear suitable gloves tested to EN374.
Cleaning	PROC05	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Waste management	PROC08b	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

See chapter 8 of this Safety Data Sheet for specifications.