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

1.1 Product identifier

Lubriflux Fettkartusche
Article number: Id.-Nr. 1339629

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

1.2.1 Relevant uses

Grease

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

RÖHM GmbH
Heinrich-Roehm-Str. 50
89567 Sontheim / GERMANY
Phone +49(0)7325 16-0
Fax +49(0)7325 16-510
Homepage www.roehm.biz
E-mail info@roehm.biz

Address enquiries to

Technical information info@roehm.biz

Safety Data Sheet sdb@chemiebuero.de (No dispatch of safety data sheets)

Safety data sheets are available from the supplier.

1.4 Emergency telephone number

Advisory body +49 (0)89-19240 (24h) (English)

Company +49(0)7325 16-0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Aerosol 1: H222 Extremely flammable aerosol. H229 Pressurised container: May burst if heated.
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways.
Skin Irrit. 2: H315 Causes skin irritation.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Repr. 2: H361f Suspected of damaging fertility.
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.
STOT SE 3: H336 May cause drowsiness or dizziness.

2.2 Label elements

The product is classified as hazardous in accordance to OSHA Standard 29 CFR 1910.1200 (HCS 2012)

Hazard pictograms

Signal word DANGER

Hazard statements

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H336 May cause drowsiness or dizziness.

Precautionary statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from flames and hot surfaces. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.
P261 Avoid breathing vapors.
P280 Wear protective gloves.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P310 Immediately call a POISON CENTER/doctor.
P302+P352 IF ON SKIN: Wash with plenty of water/soap.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

2.3 Other hazards

Human health dangers If swallowed or in the event of vomiting, risk of product entering the lungs.

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
0 - 95	Butane
	CAS: 106-97-8
25 - 50	Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
0 - 95	Propane
	CAS: 74-98-6
0 - 95	iso-Butane
	CAS: 75-28-5
2,5 - < 10	Propylene carbonate
	CAS: 108-32-7
<= 2,5	Aluminium powder
	CAS: 7429-90-5
0,25 - < 2,5	n-Hexane
	CAS: 110-54-3
0 - 2	Isopentane
	CAS: 78-78-4
≤ 1%	Chromium
	CAS: 7440-47-3
0,25 - < 1	Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6
0,25 - < 1	Tolutriazol Derivate, EC / List no.939-700-4
	CAS: 80584-90-3/80595-74-0
0,1 - < 1	Níquel
	CAS: 7440-02-0
0 - 2	Ethane
	CAS: 74-84-0

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact In case of contact with skin wash off immediately with soap and water.
If skin irritation or rash occurs: Get medical advice/attention.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion Consult a doctor immediately.
Do not induce vomiting.
Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects
Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to the doctor.
If swallowed or in the event of vomiting, risk of product entering the lungs.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam, dry powder, water spray jet, carbon dioxide
Sand.
Fire extinguishing method of surrounding areas must be considered.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.
Bursting aerosols can be forcibly projected from a fire.

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Cool containers at risk with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep away from all sources of ignition.
Ensure adequate ventilation.
Wear suitable protective equipment. For personal protection see SECTION 8.
Use breathing apparatus.
Keep people away and stay on the upwind side.

6.2 Environmental precautions

In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Take up residues with absorbent material (e.g. sand, sawdust, general purpose binder, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
Provide good room ventilation even at ground level (vapors are heavier than air).
Avoid contact with eyes and skin. Use personal protective equipment.

Keep away from open flames, hot surfaces and sources of ignition.
Pressurised container: May burst if heated.
Do not pierce or burn, even after use.
Use explosion-proofed equipment/fittings and non-sparkling tools.
Take precautionary measures against static discharges.

Do not eat, drink or smoke when using this product.
Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Do not store with combustible materials.
Do not store together with oxidizing agents.

Keep container in a well-ventilated place.
Keep in a cool place, heat causes increase in pressure and risk of bursting.
Protect from heat/overheating and from sun.
Do not keep at temperatures above 50 °C.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (US)

Substance
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
Long-term exposure: 100 ppm, 525 mg/m³, OSHA
Propane
CAS: 74-98-6
Long-term exposure: 1000 ppm, 1800 mg/m³, OSHA
Butane
CAS: 106-97-8
Long-term exposure: 800 ppm, 1900 mg/m³, NIOSH
n-Hexane
CAS: 110-54-3
Long-term exposure: 500 ppm, 1800 mg/m³, (ACGIH: 50 ppm, 176 mg/m³)
Níquel
CAS: 7440-02-0
Long-term exposure: 0,015 mg/m³, NIOSH; OSHA-PEL - 1 mg/m³
N,N-Bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine
CAS: 80595-74-0
Long-term exposure: OSHA PEL
iso-Butane
CAS: 75-28-5
Long-term exposure: 1000 ppm, ACGIH 2011
Chromium
CAS: 7440-47-3
Long-term exposure: 0,5 mg/m³, OSHA

DNEL

Substance
Butane, CAS: 106-97-8
There are no DNEL values established for the substance.
Propane, CAS: 74-98-6
There are no DNEL values established for the substance.
n-Hexane, CAS: 110-54-3
Industrial, inhalative, Long-term - systemic effects, 75 mg/m³
Industrial, dermal, Long-term - systemic effects, 11 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 16 mg/m³
general population, dermal, Long-term - systemic effects, 5,3 mg/kg bw/day
general population, oral, Long-term - systemic effects, 4 mg/kg bw/day
iso-Butane, CAS: 75-28-5
There are no DNEL values established for the substance.
Propylene carbonate, CAS: 108-32-7
Industrial, inhalative, Long-term - systemic effects, 70,53 mg/m³
Industrial, inhalative, Long-term - local effects, 20 mg/m³
Industrial, dermal, Long-term - systemic effects, 20 mg/kg bw/day

Industrial, dermal, Long-term - local effects, 10 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 17,4 mg/m³
general population, inhalative, Long-term - local effects, 10 mg/m³
general population, dermal, Long-term - local effects, 10 mg/kg bw/day
general population, oral, Long-term - local effects, 10 mg/kg bw/day
Tolutriazol Derivate, EC / List no.939-700-4, CAS: 80584-90-3/80595-74-0
Industrial, inhalative, Long-term - systemic effects, 1,3 mg/m³
Industrial, dermal, Long-term - systemic effects, 0,4 mg/kg bw/d
general population, dermal, Long-term - systemic effects, 0,2 mg/kg bw/d
general population, oral, Long-term - systemic effects, 0,2 mg/kg bw/d
general population, inhalative, Long-term - systemic effects, 0,3 mg/m³
Isopentane, CAS: 78-78-4
Industrial, inhalative, Long-term - systemic effects, 3000 mg/m³
Industrial, dermal, Long-term - systemic effects, 432 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 643 mg/m³
general population, dermal, Long-term - systemic effects, 214 mg/kg bw/day
general population, oral, Long-term - systemic effects, 214 mg/kg bw/day
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
Industrial, dermal, Long-term - systemic effects, 773 mg/kg bw/day
Industrial, inhalative, Long-term - systemic effects, 2035 mg/m³
general population, inhalative, Long-term - systemic effects, 608 mg/m³
general population, dermal, Long-term - systemic effects, 699 mg/kg bw/day
general population, oral, Long-term - systemic effects, 699 mg/kg bw/day
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6, CAS: -
Industrial, inhalative, Long-term - systemic effects, 4.28 mg/m³
Industrial, dermal, Long-term - systemic effects, 12.5 mg/kg bw/day
Industrial, dermal, Long-term - local effects, 160 µg/cm²
Industrial, dermal, Acute - local effects, 160 µg/cm²
general population, inhalative, Long-term - systemic effects, 1.09 mg/m³
general population, dermal, Long-term - systemic effects, 6.25 mg/kg bw/day
general population, dermal, Long-term - local effects, 160 µg/cm²
general population, dermal, Acute - local effects, 160 µg/cm²
general population, oral, Long-term - systemic effects, 250 µg/kg bw/day
Aluminium powder, CAS: 7429-90-5
Industrial, inhalative (dust), Long-term - local effects, 3,72 mg/m³

PNEC

Substance
Butane, CAS: 106-97-8
There are no PNEC values established for the substance.
Propane, CAS: 74-98-6
There are no PNEC values established for the substance.
iso-Butane, CAS: 75-28-5
There are no PNEC values established for the substance.
Propylene carbonate, CAS: 108-32-7
seawater, 0,09 mg/l
freshwater, 0,9 mg/l

sewage treatment plants (STP), 7400 mg/l
soil, 0,81 mg/kg
Tolutriazol Derivate, EC / List no.939-700-4, CAS: 80584-90-3/80595-74-0
freshwater, 0,000976 mg/l
seawater, 0,0000976 mg/l
sewage treatment plants (STP), 0,69 mg/l
Isopentane, CAS: 78-78-4
There are no PNEC values established for the substance.
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
There are no PNEC values established for the substance.
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6, CAS: -
freshwater, 2.4 µg/L
seawater, 240 ng/L
sewage treatment plants (STP), 24.33 mg/L
sediment (freshwater), 12.9 µg/kg sediment dw
sediment (seawater), 1.29 µg/kg sediment dw
soil, 1.17 µg/kg soil dw
oral (food), 10 mg/kg food

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Not required under normal conditions.
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. 0,4 mm: Nitrile rubber, >480 min (EN 374-1/-2/-3).
Skin protection	Protective clothing (EN 340)
Other	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier. Do not inhale gases. Avoid contact with eyes and skin.
Respiratory protection	In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection. Short term: filter apparatus, filter A. (DIN EN 14387)
Thermal hazards	Not applicable
Delimitation and monitoring of the environmental exposition	Comply with applicable environmental regulations limiting discharge to air, water and soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	1) Liquid 2) Liquefied gas
Form	Dual-chamber aerosol can
Color	dark grey (Liquid)
Odor	like mineral oil
Odor threshold	No information available.
pH-value	Not applicable
pH-value [1%]	Not applicable
Boiling point or initial boiling point and boiling range [°C]	80 - 110 (176 - 230 °F) (Liquid) -42 - 0 (-43,6 - 32 °F) (propellant)
Flash point [°C]	< 0 (< 32 °F) (Liquid) -80 (-112 °F) (1013 hPa) (Propellant)
Flammability	Not applicable
Lower explosion limit	0,8 Vol. % (CAS 64742-49-0) (Liquid) 5 Vol. % (propellant)
Upper explosion limit	8,0 Vol. % (CAS 64742-49-0) (Liquid) 10,9 Vol. % (propellant)
Oxidizing properties	No
Vapor pressure/gas pressure [kPa]	220 - 840 (20°C / 68°F) (propellant)
Density [g/cm³]	ca. 0,9 (20 °C / 68°F) (Liquid) 0,5 - 0,58 (20°C / 68°F) (propellant)
Relative density	Not determined
Bulk density [kg/m³]	Not applicable
Solubility in water	virtually insoluble
Solubility other solvents	No information available.
Partition coefficient n-octanol/water (log value)	Not applicable
Kinematic viscosity	Not applicable
Relative vapour density	Not applicable
Melting point [°C]	Not applicable
Auto-ignition temperature [°C]	365 - 470°C (689 - 878°F) (propellant) 250°C (482°F) (Liquid)
Decomposition temperature [°C]	Not applicable
Particle characteristics	No information available.

9.2 Other information

Temperature class (ATEX - Equipment intended for use in explosive atmospheres): T2 (propellant)

SECTION 10: Stability and reactivity

10.1 Reactivity

Heat causes increase in pressure and risk of bursting.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

No dangerous reactions known if used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Product
Based on the information available, the classification criteria have not been fulfilled.

Substance
Níquel, CAS: 7440-02-0
LD50, oral, Rat, > 9000 mg/kg (IUCLID)
n-Hexane, CAS: 110-54-3
LD50, oral, Rat, 16000 mg/kg bw
Propylene carbonate, CAS: 108-32-7
LD50, oral, Rat, 33520 mg/kg
NOAEL, oral, Rat, 1000 mg/kg (OECD 414)
Tolutriazol Derivate, EC / List no.939-700-4, CAS: 80584-90-3/80595-74-0
LD50, oral, Rat, > 2000 mg/kg
Isopentane, CAS: 78-78-4
LD50, oral, Rat, >2000 mg/kg bw (OECD 401)
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
LD50, oral, Rat, > 5840 mg/kg
Chromium, CAS: 7440-47-3
LD50, oral, Rat, > 5000 mg/kg
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6, CAS: -
LD50, oral, Rat, 2000 mg/kg bw

Acute dermal toxicity

Product
Based on the information available, the classification criteria have not been fulfilled.

Substance
n-Hexane, CAS: 110-54-3
LD50, dermal, Rabbit, > 3350 mg/kg 3350 mg/kg bw
Propylene carbonate, CAS: 108-32-7
LD50, dermal, Rabbit, > 2000 mg/kg
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
LD50, dermal, Rat, > 2920 mg/kg

Acute inhalational toxicity

Product
Based on the information available, the classification criteria have not been fulfilled.

Substance
Butane, CAS: 106-97-8
LC50, inhalative, Rat, 658 mg/L (IUCLID)
Ethane, CAS: 74-84-0

LC50, Rat, 1443 mg/l/15min
LC50, mouse, 1237 mg/l/2h
Propane, CAS: 74-98-6
LC50, inhalative, Rat, > 1443 mg/l (15 min) (Lit.)
n-Hexane, CAS: 110-54-3
LC50, inhalative, Rat, 259,4 g/m³, 24h
iso-Butane, CAS: 75-28-5
LC50, inhalative, mouse, 1237 mg/L
Isopentane, CAS: 78-78-4
LC50, inhalativ (gas), Rat, > 25,3 mg/L, 4h
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
LC50, inhalative, Rat, > 25,2 mg/l (4 h)
Chromium, CAS: 7440-47-3
LC50, inhalative, Rat, 5,41 mg/l/4h
Aluminium powder, CAS: 7429-90-5
LC50, inhalativ (dust), Rat, > 5,09 mg/L (4h)

Serious eye damage/irritation Based on the information available, the classification criteria have not been fulfilled.

Substance
Butane, CAS: 106-97-8
Eye, non-irritating
Ethane, CAS: 74-84-0
no adverse effect observed
Níquel, CAS: 7440-02-0
no adverse effect observed
Propane, CAS: 74-98-6
Eye, non-irritating
n-Hexane, CAS: 110-54-3
Eye, non-irritating
iso-Butane, CAS: 75-28-5
Eye, non-irritating
Propylene carbonate, CAS: 108-32-7
Rabbit, in vivo, OECD 405, irritant
Isopentane, CAS: 78-78-4
no adverse effect observed
Eye, no adverse effect observed
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
Eye, in vivo, non-irritating
Chromium, CAS: 7440-47-3
no adverse effect observed

Skin corrosion/irritation Irritant
Calculation method

Substance
Butane, CAS: 106-97-8
dermal, non-irritating
Ethane, CAS: 74-84-0

no adverse effect observed
Níquel, CAS: 7440-02-0
no adverse effect observed
Propane, CAS: 74-98-6
dermal, non-irritating
n-Hexane, CAS: 110-54-3
dermal, irritant
iso-Butane, CAS: 75-28-5
dermal, non-irritating
Propylene carbonate, CAS: 108-32-7
Rabbit, in vivo, OECD 404, non-irritating
Isopentane, CAS: 78-78-4
no adverse effect observed
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
dermal, in vivo, irritant
Chromium, CAS: 7440-47-3
no adverse effect observed

Respiratory or skin sensitisation May cause an allergic skin reaction.
Calculation method

Substance
Butane, CAS: 106-97-8
dermal, non-sensitizing
inhalative, non-sensitizing
Ethane, CAS: 74-84-0
dermal, no adverse effect observed
inhalative, no adverse effect observed
Propane, CAS: 74-98-6
dermal, non-sensitizing
inhalative, non-sensitizing
n-Hexane, CAS: 110-54-3
dermal, non-sensitizing, LLNA Test,
iso-Butane, CAS: 75-28-5
dermal, non-sensitizing
inhalative, non-sensitizing
Propylene carbonate, CAS: 108-32-7
Human, in vivo (non-LLNA), non-sensitizing
Isopentane, CAS: 78-78-4
dermal, no adverse effect observed
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
dermal, in vivo, non-sensitizing
Chromium, CAS: 7440-47-3
dermal, no adverse effect observed
inhalative, no adverse effect observed

Specific target organ toxicity — single exposure Vapors may cause drowsiness and dizziness.
Calculation method

Substance
Butane, CAS: 106-97-8
inhalative, non-irritating
Ethane, CAS: 74-84-0
inhalative, no adverse effect observed
Propane, CAS: 74-98-6
inhalative, non-irritating
iso-Butane, CAS: 75-28-5
inhalative, non-irritating
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
inhalative, adverse effect observed
Chromium, CAS: 7440-47-3
inhalative, no adverse effect observed

Specific target organ toxicity — repeated exposure

May cause damage to organs through prolonged or repeated exposure.
Calculation method

Substance
Propane, CAS: 74-98-6
NOAEC, inhalative, Rat, 4437 mg/m³, The effects observed are not sufficient for classification.
n-Hexane, CAS: 110-54-3
LOAEC, inhalative, mouse, 1760 mg/m³
Isopentane, CAS: 78-78-4
NOAEC, inhalative, Rat, 20000 mg/m³, no adverse effect observed
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6, CAS: -
NOAEL, oral, Rat, 150 mg/kg bw/day

Mutagenicity

Based on the information available, the classification criteria have not been fulfilled.

Substance
n-Hexane, CAS: 110-54-3
in vitro, negativ
in vivo, negativ
Propylene carbonate, CAS: 108-32-7
in vitro DANN damage and/or repair study, OECD 482, negativ
mouse, in vivo mammalian somatic cell study, OECD 474, negativ
Isopentane, CAS: 78-78-4
in vitro, negativ
in vivo, negativ
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
in vivo, negativ

Reproduction toxicity

Suspected of damaging fertility.
Calculation method

- Fertility

Substance
n-Hexane, CAS: 110-54-3
NOAEC, inhalative, Rat, 31680 mg/m³
Propylene carbonate, CAS: 108-32-7

NOAEL, oral, mouse, 10 100 mg/kg bw/d (Effect on fertility), no adverse effect observed
NOAEC, oral, Rat, 1000 mg/kg bw/d (Effect on developmental toxicity), adverse effect observed
Isopentane, CAS: 78-78-4
NOAEC, inhalative, Rat, 24080 mg/m³, no adverse effect observed
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
NOAEC, inhalative, (systemic): 8117 mg/m³, The effects observed are not sufficient for classification.

- Development

Substance
n-Hexane, CAS: 110-54-3
NOAEC, inhalative, Rat, 31680 mg/m³
Propylene carbonate, CAS: 108-32-7
NOAEL, oral, mouse, 10 100 mg/kg bw/d (Effect on fertility), no adverse effect observed
NOAEC, oral, Rat, 1000 mg/kg bw/d (Effect on developmental toxicity), adverse effect observed
Isopentane, CAS: 78-78-4
NOAEL, oral, Rat, 1000 mg/kg bw/day, no adverse effect observed
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
NOAEC, inhalative, (systemic): 8117 mg/m³, The effects observed are not sufficient for classification.

Carcinogenicity Based on the information available, the classification criteria have not been fulfilled.

Substance
n-Hexane, CAS: 110-54-3
NOAEC, inhalative, mouse, 10560 mg/m³
Propylene carbonate, CAS: 108-32-7
no adverse effect observed
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
no adverse effect observed

Aspiration hazard May be fatal if swallowed and enters airways.
Calculation method

General remarks

The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials. Toxicological data of complete product are not available.

SECTION 12: Ecological information

12.1 Toxicity

Substance
Butane, CAS: 106-97-8
LC50, (48h), Invertebrates, 14,22 - 69,43 mg/L
Níquel, CAS: 7440-02-0
LC50, (96h), Brachidanio rerio, > 100 mg/l (OECD 203)
EC50, (48h), Daphnia magna, > 100 mg/l (OECD 202)
IC50, (72h), Selenastrum capricornutum, 100 mg/l (OECD 201)
n-Hexane, CAS: 110-54-3
EL50, (48h), Invertebrates, 21,85 mg/L
EL50, (72h), Algae, 9,285 mg/L
NOELR, (72h), Algae, 2,077 mg/L
NOELR, (21d), Invertebrates, 4,888 mg/L
NOELR, (28d), fish, 2,8 mg/L
LL50, (96h), fish, 12,51 mg/L
Propylene carbonate, CAS: 108-32-7
LC50, (96h), fish, > 1000 mg/l (EU EC C.1)
EC50, (16h), Bacteria, 25619 mg/l (DIN DIN 38412 Part 8)
EC50, (48h), Daphnia magna, > 1000 mg/l (OECD 202)
NOEC, (72h), Algae, 900 mg/l (OECD 201)
ErC50, (72h), Algae, > 900 mg/l (OECD 201)
Tolutriazol Derivate, EC / List no.939-700-4, CAS: 80584-90-3/80595-74-0
LC50, (96h), fish, 1,3 mg/l
EC50, (48h), Daphnia magna, 2,05 mg/l
EC50, (72h), Algae, 0,976 mg/l
Isopentane, CAS: 78-78-4
EL50, (48h), Daphnia magna, 59,9 mg/L
EL50, (72h), Pseudokirchneriella subcapitata, 25,3 mg/L
LL50, (96h), Oncorhynchus mykiss, 34,3 mg/L
EL10, (21d), Daphnia magna, 11,5 mg/L
EL10, (60d), Oncorhynchus mykiss, 6,57 mg/L
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
LC50, (96h), Oncorhynchus mykiss, 11,4 mg/L
EC50, (48h), Daphnia magna, 3 mg/L
NOELR, (28d), Oncorhynchus mykiss, 2,045 mg/L
NOELR, (21d), Daphnia magna, 1 mg/L
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6, CAS: -
EC50, (96h), Algae, 6.4 - 15 mg/L
EL50, (48h), Invertebrates, 91.4 mg/L
EL50, (21d), Invertebrates, 660 - 910 µg/L
LL50, (96h), fish, 24 mg/L
Aluminium powder, CAS: 7429-90-5
LC50, (96h), Pimephales promelas, 1,16 mg/L
LC50, (48h), Ceriodaphnia dubia, 0,72 mg/L

12.2 Persistence and degradability

Behaviour in environment compartments No information available.

Behaviour in sewage plant No information available.

Biological degradability

Substance
Níquel, CAS: 7440-02-0
The methods for determining the boilogical degradability are not applicable to inorganic substances.
n-Hexane, CAS: 110-54-3
The product is readily biodegradable.
Propylene carbonate, CAS: 108-32-7
OECD 301 B, The product is readily biodegradable.
Isopentane, CAS: 78-78-4
The product is readily biodegradable.
Naphtha (petroleum), hydrotreated light, CAS 64742-49-0 (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane, EC / List no. 921-024-6)
(28d), 98%, OECD 301 F
Chromium, CAS: 7440-47-3
The methods for determining the boilogical degradability are not applicable to inorganic substances.
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6, CAS: -
The product is not biodegradable.
Aluminium powder, CAS: 7429-90-5
The methods for determining the boilogical degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Substance
Propylene carbonate, CAS: 108-32-7
log Pow, -0,41
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), EC / List no. 931-384-6, CAS: -
BCF, 432

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

12.7 Other adverse effects

Ecological data of complete product are not available.
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

For recycling, consult manufacturer.

Contaminated packaging

Uncontaminated packaging may be taken for recycling.

RCRA Hazard Class (40CFR 261)

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities.

SECTION 14: Transport

14.1 UN number

Transport by land according to ADR/RID	1950
Inland navigation (ADN)	1950
Marine transport in accordance with IMDG	1950
Air transport in accordance with IATA	1950
DOT Road Shipment Information (49 CFR)	1950

14.2 UN proper shipping name

Transport by land according to ADR/RID	Aerosols
- Classification Code	5F
- Label	
- ADR LQ	1 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (D)
Inland navigation (ADN)	Aerosols
- Classification Code	5F
- Label	
Marine transport in accordance with IMDG	Aerosols (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, < 5% n-hexane)
- EMS	F-D, S-U
- Label	
- IMDG LQ	1 l
Air transport in accordance with IATA	Aerosols, flammable
- Label	
DOT Road Shipment Information (49 CFR)	UN/NA 1950 Aerosols 2
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	2
Inland navigation (ADN)	2
Marine transport in accordance with IMDG	2.1
Air transport in accordance with IATA	2.1
DOT Road Shipment Information (49 CFR)	2

14.4 Packing group

Transport by land according to ADR/RID	Not applicable
Inland navigation (ADN)	Not applicable
Marine transport in accordance with IMDG	Not applicable
Air transport in accordance with IATA	Not applicable
DOT Road Shipment Information (49 CFR)	Not applicable

14.5 Environmental hazards

Transport by land according to ADR/RID	No
Inland navigation (ADN)	No
Marine transport in accordance with IMDG	No
Air transport in accordance with IATA	No
DOT Road Shipment Information (49 CFR)	No

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

No information available.

SECTION 15: Regulatory information

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

US Regulations

National regulations	29 CFR 1910.1200-HCS 2012, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65
- SARA, 302	No information available.
- SARA, 311	Flammable (aerosols) Aspiration Hazard Skin Sensitization Skin Irritation Reproductive toxicity Specific target organ toxicity (repeated exposure) Specific target organ toxicity (single exposure)
- SARA, 313	This product contain one ingredient regulated under this list(40 CFR part 372.65): CAS 7440-02-0 / CAS 7440-47-3 / CAS 7429-90-5 / CAS 110-54-3 / CAS 110-82-7
- CA Proposition 65	 WARNING: This product can expose you to chemicals including "n-Hexane, CAS 110-54-3", which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov."  WARNING: This product can expose you to chemicals including "Nickel, CAS 7440-02-0", which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.
- TSCA	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.
- FDA	No information available.
American Conference of Governmental Industrial Hygienists - ACGIH	No information available.
International Agency for Research on Cancer IARC	IARC: Group 2B carcinogen CAS 7440-02-0 IARC: Group 3 CAS 7440-47-3
National Toxicology Program - NTP	CAS 7440-02-0 is named in the NTP - National Toxicology Program.
HAP-VOC	VOC-content: 100% (Propellant) VOC-content: 46,8 % (Liquid)
Transport-regulations	DOT-Classification, ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024)

15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists;
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route;
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses;
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure;
CAS = Chemical Abstracts Service;
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act;
CFR = Code of Federal Regulations;
CPR = Controlled Products Regulations;
DMEL = Derived Minimum Effect Level;
DNEL = Derived No Effect Level;
DOT = Department of Transportation;
EC50 = Median effective concentration;
EPA = Environmental Protection Agency;
GHS = Globally Harmonized System of Classification and Labelling of Chemicals;
IATA = International Air Transport Association;
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;
IC50 = Inhibition concentration, 50%;
IMDG = International Maritime Code for Dangerous Goods;
IARC = International Agency of Research on Cancer;
IATA = International Air Transport Association;
TSCA = Toxic Substance Control Act;
HMIS = Hazardous Materials Identification System;
NFPA = National Fire Protection Association;
NIOSH = National Institute for Occupational Safety and Health;
OSHA = Occupational Safety and Health Administration;
LC50 = Lethal concentration, 50%;
LD50 = Median lethal dose, 50%;
MARPOL = International Convention for the Prevention of Marine Pollution from Ships;
PBT = Persistent, Bioaccumulative and Toxic substance;
PNEC = Predicted No-Effect Concentration;
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals;
SARA = Superfund Amendments and Reauthorization Act;
TLV®/TWA = Threshold limit value – time-weighted average;
TLV®STEL = Threshold limit value – short-time exposure limit;
VOC = Volatile Organic Compounds;
vPvB = very Persistent and very Bioaccumulative;

16.2 Ratings

NFPA Ratings

TOP, FLAMMABILITY: 3 - Severe Hazard
LEFT, HEALTH: 2 - Moderate Hazard
RIGHT, REACTIVITY: 0 - Minimal Hazard
BOTTOM, SPECIAL NOTICE: -

HMIS Ratings

HEALTH	2*
FLAMMABILITY	4
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

2*- Moderate chronic Hazard
4 - Extreme Hazard
0 - Minimal Hazard
X - Personal protection rating to be supplied by user depending on use conditions

PERSONAL PROTECTION:

A - Safety Glasses

B - Safety Glasses and Gloves

C - Safety Glasses, Gloves and Protection Apron

D - Face Shield, Gloves and Protection Apron

E - Safety Glasses, Gloves and Dust Respirator

F - Safety Glasses, Gloves, Protection Apron and Dust Respirator

G - Safety Glasses, Gloves and Vapor Respirator.

H - Splash Goggles, Gloves, Protection Apron and Vapor Respirator.

I - Safety Glasses, Gloves, Dust Respirator and Vapor Respirator.

J - Splash Goggles, Gloves, Protection Apron, Dust Respirator and Vapor Respirator.

K - Airline Mask or Hood, Gloves, Full Suit and Boots.

X - Personal protection rating to be supplied by user depending on use conditions

Modified position 2.2, 9.1