

SECTION 1: Identification of the substance / preparation and of the company

1.1 Product identifier

Powermix Härter (Iso):

Valid for following types:

PMX 2120, PMX 5120, PMX 2444, PMX 2445, PMX 5045, PMX 5145, PMX 5245, PMX 2445-2, PMX 5045-2,

PMX 2446, PMX 5046, PMX 5146, PMX 5646, PMX 2470, PMX 5030, PMX 5050, PMX 5070, PMX 5170, PMX 5270,

PMX 5570, PMX 5670, PMX 2471, PMX 5031, PMX 5051, PMX 5071, PMX 5271, PMX 5671, PMX 2471-2, PMX 5071-2,

PMX 2570-2, PMX 5570-2, PMX 5072, PMX 5272, PMX 5672, PMX 5073, PMX 5273

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

1.2.1 Relevant uses

Hardener
Adhesive

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company Voelkel Industrie Produkte GmbH
Frauenstrasse 31
82216 Maisach / GERMANY
Phone +49 (0) 8141 35 549 0
Fax +49 (0) 8141 35 549 99
Homepage www.vip-gmbh.com
E-mail info@vip-gmbh.com

Address enquiries to

Technical information info@vip-gmbh.com
Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency phone

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Carc. 2: H351 Suspected of causing cancer.

Acute Tox. 4: H332 Harmful if inhaled.

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.

Eye Irrit. 2: H319 Causes serious eye irritation.

Skin Irrit. 2: H315 Causes skin irritation.

STOT SE 3: H335 May cause respiratory irritation.

Resp. Sens. 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Sens. 1: H317 May cause an allergic skin reaction.

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2.1.2 Classification according to Directive 67/548/EEC or 1999/45/EC

Xn, Harmful - R 20: Harmful by inhalation.
 Xi, Irritant - R 36/37/38: Irritating to eyes, respiratory system and skin.
 Xn, carcinogen category 3 - R 40: Limited evidence of a carcinogenic effect.
 Sensitizing. - R 42/43: May cause sensitisation by inhalation and skin contact.
 Xn, Harmful - R 48/20: Harmful - danger of serious damage to health by prolonged exposure through inhalation.

2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Labelling according to Regulation (EC) 1272/2008

Hazard pictograms



Signal word

DANGER

Contains:

Diphenylmethanediisocyanate, isomeres and homologues
 4,4'-Methylenediphenyl diisocyanate
 o-(p-Isocyanatobenzyl)phenyl isocyanate
 2,2'-methylenediphenyl diisocyanate

Hazard statements

H351 Suspected of causing cancer.
 H332 Harmful if inhaled.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H319 Causes serious eye irritation.
 H315 Causes skin irritation.
 H335 May cause respiratory irritation.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 May cause an allergic skin reaction.

Precautionary statements

P260 Do not breathe vapours.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/eye protection/face protection.
 P284 [In case of inadequate ventilation] wear respiratory protection.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308+P311 IF exposed or concerned: Call a POISON CENTER/ doctor/...
 P405 Store locked up.
 P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

Special labelling

EUH204 Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards

Human health dangers

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

Other hazards

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

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
30 - < 70	Diphenylmethanediisocyanate, isomeres and homologues CAS: 9016-87-9 GHS/CLP: Carc. 2: H351 - Acute Tox. 4: H332 - STOT RE 2: H373 - Eye Irrit. 2: H319 - STOT SE 3: H335 - Skin Irrit. 2: H315 - Resp. Sens. 1: H334 - Skin Sens. 1: H317 EEC: Xn, R 20-36/37/38-40-42/43-48/20
20 - < 30	4,4'-Methylenediphenyl diisocyanate CAS: 101-68-8, EINECS/ELINCS: 202-966-0, EU-INDEX: 615-005-00-9, ECB-Nr.: 01-2119457014-47-XXXX GHS/CLP: Carc. 2: H351 - Acute Tox. 4: H332 - STOT RE 2: H373 - Eye Irrit. 2: H319 - STOT SE 3: H335 - Skin Irrit. 2: H315 - Resp. Sens. 1: H334 - Skin Sens. 1: H317 EEC: Xn, R 20-36/37/38-40-42/43-48/20
10 - < 25	o-(p-Isocyanatobenzyl)phenyl isocyanate CAS: 5873-54-1, EINECS/ELINCS: 227-534-9, EU-INDEX: 615-005-00-9, ECB-Nr.: 01-2119480143-45-XXXX GHS/CLP: Carc. 2: H351 - Acute Tox. 4: H332 - STOT RE 2: H373 - Eye Irrit. 2: H319 - STOT SE 3: H335 - Skin Irrit. 2: H315 - Resp. Sens. 1: H334 - Skin Sens. 1: H317 EEC: Xn, R 20-36/37/38-40-42/43-48/20
1 - < 5	2,2'-methylenediphenyl diisocyanate CAS: 2536-05-2, EINECS/ELINCS: 219-799-4, EU-INDEX: 615-005-00-9, ECB-Nr.: 01-2119927323-43-XXXX GHS/CLP: Acute Tox. 4: H332 - Skin Irrit. 2: H315 - Eye Irrit. 2: H319 - Resp. Sens. 1: H334 - Skin Sens. 1: H317 - Carc. 2: H351 - STOT SE 3: H335 - STOT RE 2: H373 EEC: Xn, R 20-36/37/38-40-42/43-48/20
1 - < 3	[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane CAS: 2530-83-8, EINECS/ELINCS: 219-784-2, ECB-Nr.: 01-2119513212-58-XXXX GHS/CLP: Eye Dam. 1: H318 EEC: Xi, R 41
0,1 - < 0,2	isophthaloyl dichloride CAS: 99-63-8, EINECS/ELINCS: 202-774-7, ECB-Nr.: 01-2119493993-19 GHS/CLP: Acute Tox. 3: H331 - Acute Tox. 4: H312 - Skin Corr. 1A: H314 - Eye Dam. 1: H318 EEC: T, R 23-21-35

Comment on component parts

Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Remove contaminated soaked clothing immediately and dispose of safely.

Inhalation

Remove the victim into fresh air and keep him calm.
In the event of symptoms seek for medical treatment.

Skin contact

In the event of contact with the skin wash immediately with polyethylene glycol, then with plenty of water.
Consult a doctor if skin irritation persists.

Eye contact

In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

Ingestion

Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.
Consult a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Carbon dioxide.
Dry powder.
Sand.

Extinguishing media that must not be used Full water jet

5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO_x).
Hydrogen cyanide (HCN).
Risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Wear full protective suit.
Collect contaminated firefighting water separately, must not be discharged into the drains.
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

Ensure adequate ventilation.
Use personal protective equipment.
High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, 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 suitable vacuuming at the processing machines.

Wash hands before breaks and after work.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Use barrier skin cream.
Keep away from food and drink.
Take off contaminated clothing and wash before reuse.



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Date printed 08.08.2014, Revision 06.08.2014

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7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.
Keep away from water.
Do not store together with oxidizing agents.
Do not store together with food and animal food/diet.
Keep container tightly closed.
Keep container in a well-ventilated place.
Protect from atmospheric moisture and water.
Store in a dry place.
Do not keep at temperatures above 50 °C.
Keep away from frost.

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 (GB)

Range [%]	Substance
30 - < 70	Diphenylmethanediisocyanate, isomeres and homologues
	CAS: 9016-87-9
	Long-term exposure: 0,02 mg/m ³ , as NCO, Sen
	Short-term exposure (15-minute): 0,07 mg/m ³
20 - < 30	4,4'-Methylenediphenyl diisocyanate
	CAS: 101-68-8, EINECS/ELINCS: 202-966-0, EU-INDEX: 615-005-00-9, ECB-Nr.: 01-2119457014-47-XXXX
	Long-term exposure: 0,02 mg/m ³ , as NCO, Sen
	Short-term exposure (15-minute): 0,07 mg/m ³
10 - < 25	o-(p-Isocyanatobenzyl)phenyl isocyanate
	CAS: 5873-54-1, EINECS/ELINCS: 227-534-9, EU-INDEX: 615-005-00-9, ECB-Nr.: 01-2119480143-45-XXXX
	Long-term exposure: 0,02 mg/m ³ , as NCO, Sen
	Short-term exposure (15-minute): 0,07 mg/m ³
1 - < 5	2,2'-methylenediphenyl diisocyanate
	CAS: 2536-05-2, EINECS/ELINCS: 219-799-4, EU-INDEX: 615-005-00-9, ECB-Nr.: 01-2119927323-43-XXXX
	Long-term exposure: 0,02 mg/m ³ , as NCO, Sen
	Short-term exposure (15-minute): 0,07 mg/m ³

DNEL

Range [%]	Substance
1 - < 5	2,2'-methylenediphenyl diisocyanate, CAS: 2536-05-2
	Industrial, inhalative, Acute - systemic effects: 0,1 mg/m ³ .
	Industrial, dermal, Acute - systemic effects: 50 mg/kg.
	Industrial, inhalative, Acute - local effects: 0,1 mg/m ³ .
	Industrial, inhalative, Long-term - systemic effects: 0,05 mg/m ³ .
	Industrial, inhalative, Long-term - local effects: 0,05 mg/m ³ .
1 - < 3	[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane, CAS: 2530-83-8
	Industrial, inhalative, Long-term - systemic effects: 147 mg/m ³ .
	Industrial, dermal, Long-term - systemic effects: 21 mg/kg/d.
	Industrial, inhalative, Acute - systemic effects: 147 mg/m ³ .
10 - < 25	o-(p-Isocyanatobenzyl)phenyl isocyanate, CAS: 5873-54-1
	Industrial, dermal, Acute - systemic effects: 50 mg/kg.
	Industrial, inhalative, Long-term - local effects: 0,05 mg/m ³ .
	Industrial, inhalative, Acute - systemic effects: 0,1 mg/m ³ .
	Industrial, dermal, Acute - local effects: 28,7 mg/cm ² .
	Industrial, inhalative, Acute - local effects: 0,1 mg/m ³ .
20 - < 30	4,4'-Methylenediphenyl diisocyanate, CAS: 101-68-8
	Industrial, inhalative, Long-term - systemic effects: 0,05 mg/m ³ .
	Industrial, dermal, Acute - systemic effects: 50 mg/kg.
	Industrial, dermal, Acute - local effects: 28,7 mg/cm ² .
	Industrial, inhalative, Acute - systemic effects: 0,1 mg/m ³ .
	Industrial, inhalative, Long-term - local effects: 0,05 mg/m ³ .
	Industrial, inhalative, Acute - local effects: 0,1 mg/m ³ .

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0,1 - < 0,2	isophthaloyl dichloride, CAS: 99-63-8
	Industrial, inhalative, Long-term - systemic effects: 3,94 mg/m ³ .
	Industrial, dermal, Long-term - systemic effects: 4,47 mg/kg bw/d.
	general population, inhalative, Long-term - systemic effects: 0,97 mg/m ³ .
	general population, dermal, Long-term - systemic effects: 2,24 mg/kg bw/d.
	general population, oral, Long-term - systemic effects: 2,24 mg/kg bw/d.

PNEC

Range [%]	Substance
1 - < 5	2,2'-methylene-diphenyl diisocyanate, CAS: 2536-05-2
	sewage treatment plants (STP), > 1 mg/l.
	soil, > 1 mg/kg.
	seawater, > 0,1 mg/l.
	freshwater, > 1 mg/l.
1 - < 3	[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane, CAS: 2530-83-8
	seawater, 0,1 mg/l.
	sediment, 0,79 mg/kg.
	soil, 0,13 mg/kg.
	sewage treatment plants (STP), 10 mg/l.
	freshwater, 1 mg/l.
10 - < 25	o-(p-Isocyanatobenzyl)phenyl isocyanate, CAS: 5873-54-1
	freshwater, > 1 mg/l.
	seawater, > 0,1 mg/l.
	soil, > 1 mg/kg.
	sewage treatment plants (STP), > 1 mg/l.
20 - < 30	4,4'-Methylene-diphenyl diisocyanate, CAS: 101-68-8
	sewage treatment plants (STP), > 1 mg/l.
	freshwater, > 1 mg/l.
	soil, > 1 mg/kg.
	seawater, > 0,1 mg/l.
0,1 - < 0,2	isophthaloyl dichloride, CAS: 99-63-8
	soil, 0,0492 mg/kg dw.
	freshwater, 0,133 mg/l.
	seawater, 0,0133 mg/l.
	sewage treatment plants (STP), 6,171 mg/l.
	sediment (freshwater), 0,6365 mg/kg dw.
	sediment (seawater), 0,06365 mg/kg dw.

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8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation. Use suitable exhaust ventilation.
Eye protection	safety glasses
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. Butyl rubber, >480 min (EN 374). Nitrile rubber, >480 min (EN 374). Polychloroprene, >480 min (EN 374).
Skin protection	Protective clothing.
Other	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier. Do not breathe vapour/spray. Avoid contact with eyes and skin.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, combination filter A-P2.
Thermal hazards	No information available.
Delimitation and monitoring of the environmental exposition	See SECTION 6+7.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	brown
Odor	characteristic
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	> 300
Flash point [°C]	> 200
Flammability [°C]	> 500
Lower explosion limit	not determined
Upper explosion limit	not determined
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	< 0,00001 mbar (25°C)
Density [g/ml]	1,17 (20°C)
Bulk density [kg/m³]	not applicable
Solubility in water	insoluble reacts with water
Partition coefficient [n-octanol/water]	not determined
Viscosity	ca. 8000 mPas (23°C)
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	< 0
Autoignition temperature [°C]	not determined
Decomposition temperature [°C]	not determined

9.2 Other information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with water, with formation of carbon dioxide.

Reactions with alcohols.

Reactions with amines.

Development of pressure and risk of bursting in closed containers.

(200°C) Risk of polymerisation.

10.4 Conditions to avoid

Strong heating.

Water.

10.5 Incompatible materials

See SECTION 10.3.

10.6 Hazardous decomposition products

In the event of fire: See SECTION 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
1 - < 5	2,2'-methylenediphenyl diisocyanate, CAS: 2536-05-2
	inhalative, Conversion value: 1,5 mg/l/4h (Dust/mist).
	LD50, oral, Rat: > 2000 mg/kg.
	LD50, dermal, Rabbit: > 9400 mg/kg (OECD 402).
	LC50, inhalative, Rat: 0,527 mg/l/4h (OECD 403).
30 - < 70	Diphenylmethanediisocyanate, isomeres and homologues, CAS: 9016-87-9
	LD50, dermal, Rabbit: > 9400 mg/kg.
	LD50, oral, Rat: > 10000 mg/kg.
	LC50, inhalative, Rat: 0,31 mg/l/4h (OECD 403).
	NOAEL, inhalative, Rat: 12 mg/m ³ (OECD 414).
	NOAEL, inhalative, Rat: 0,2 mg/m ³ (OECD 453).
1 - < 3	[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane, CAS: 2530-83-8
	LD50, dermal, Rabbit: 4.250 mg/kg (OECD 402).
	LD50, oral, Rat: 8.025 mg/kg (OECD 401).
	LC50, inhalative, Rat: > 5.300 mg/l/4h (OECD 403).
	NOAEL, oral, Rat: 1.000 mg/kg/28d (OECD 407).
	NOAEL, inhalative, Rat: 0,225 mg/l/14d (OECD 412).
10 - < 25	o-(p-Isocyanatobenzyl)phenyl isocyanate, CAS: 5873-54-1
	inhalative, Conversion value: 1,5 mg/l/4h (Dust/mist).
	LD50, dermal, Rabbit: > 9400 mg/kg.
	LD50, oral, Rat: > 2000 mg/kg.
	LC50, inhalative, Rat: 0,387 mg/l/4h.
20 - < 30	4,4'-Methylenediphenyl diisocyanate, CAS: 101-68-8
	inhalative, Conversion value: 1,5 mg/l/4h (Dust/mist).
	LD50, dermal, Rabbit: > 9400 mg/kg (OECD 402).
	LD50, oral, Rat: > 2000 mg/kg.
	LC50, inhalative, Rat: 0,368 mg/l/4h (OECD 403).
	LC50, inhalative, Rat: > 2,24 mg/l/1h (OECD 403).
	LC50, inhalativ (mist), Rat: 0,49 mg/l/4h.
0,1 - < 0,2	isophthaloyl dichloride, CAS: 99-63-8
	LD50, oral, Rat: > 5000 mg/kg.
	LD50, dermal, Rabbit: 1410 mg/kg.
	LC50, inhalativ (mist), Rat: 0,7 mg/l/4h.

Serious eye damage/irritation	Irritant
Skin corrosion/irritation	Irritant
Respiratory or skin sensitisation	Sensitizing.
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
General remarks	

The product was classified on the basis of the calculation procedure of the preparation directive.

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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.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
1 - < 5	2,2'-methylenediphenyl diisocyanate, CAS: 2536-05-2
	LC50, (96h), Danio rerio: > 1000 mg/l (OECD 203).
	EC50, (3h), Bacteria: > 100 mg/l (OECD 209).
	EC50, (72h), Scenedesmus subspicatus: > 1640 mg/l (OECD 201).
	EC50, (24h), Daphnia magna: > 1000 mg/l (OECD 202).
	NOEC, (21d), Daphnia magna: > 10 mg/l (OECD 202).
30 - < 70	Diphenylmethanediisocyanate, isomeres and homologues, CAS: 9016-87-9
	LC50, (96h), Danio rerio: > 1000 mg/l (OECD 203).
	EC50, (3h), Bacteria: > 100 mg/l (OECD 209).
	EC50, (24h), Daphnia magna: > 1000 mg/l (OECD 202).
	NOEC, (21d), Daphnia magna: > 10 mg/l (OECD 202).
	ErC50, (72h), Scenedesmus subspicatus: > 1640 mg/l (OECD 201).
1 - < 3	[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane, CAS: 2530-83-8
	LC50, (96h), Cyprinus carpio: ca. 55 mg/l.
	LC50, (48h), ca. 324 mg/l (Simocephalus vetulus).
	EC50, Algae: 119 mg/l/7d.
	NOEC, (21d), Daphnia magna: >= 100 mg/l (OECD 211).
	NOEC, Algae: < 50 mg/l/7d.
	EC10, Algae: 40 mg/l/7d.
10 - < 25	o-(p-Isocyanatobenzyl)phenyl isocyanate, CAS: 5873-54-1
	LC50, (96h), fish: > 1000 mg/l.
	EC50, (24h), Daphnia magna: > 1000 mg/l.
	EC50, (3h), Bacteria: > 100 mg/l (OECD 209).
	NOEC, (21d), Daphnia magna: > 10 mg/l (OECD 202).
	ErC50, (72h), Scenedesmus subspicatus: > 1640 mg/l (OECD 201).
20 - < 30	4,4'-Methylenediphenyl diisocyanate, CAS: 101-68-8
	LC50, (96h), Danio rerio: > 1000 mg/l (OECD 203).
	ErC50, (72h), Scenedesmus subspicatus: > 1640 mg/l (OECD 201).
0,1 - < 0,2	isophthaloyl dichloride, CAS: 99-63-8
	LC50, (96h), Pimephales promelas: 134 mg/l.
	EC50, (96h), Selenastrum capricornutum: > 996 mg/l.
	EC50, (48h), Daphnia magna: > 952 mg/l.

12.2 Persistence and degradability

(CAS 32055-14-4) Henry-Konstante : 0,0229 Pa*m3/mol

Behaviour in environment compartments not determined

Behaviour in sewage plant not determined

Biological degradability The product is not biodegradable.

12.3 Bioaccumulative potential

(CAS 32055-14-4) - Accumulation in organisms is not expected.

(CAS 9016-87-9) BCF : < 14 (42d, OECD 305C)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Ecological data of complete product are not available.

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

Do not discharge product unmonitored into the environment or into the drainage.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.
Coordinate disposal with the authorities if necessary.

Waste no. (recommended)

080501*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended)

150110*

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

Marine transport in accordance with IMDG NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	yes
- VOC (1999/13/CE)	not applicable

15.2 Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1 R-phrases (SECTION 3)

R 23: Toxic by inhalation.
R 21: Harmful in contact with skin.
R 35: Causes severe burns.
R 41: Risk of serious damage to eyes.
R 20: Harmful by inhalation.
R 36/37/38: Irritating to eyes, respiratory system and skin.
R 40: Limited evidence of a carcinogenic effect.
R 42/43: May cause sensitisation by inhalation and skin contact.
R 48/20: Harmful - danger of serious damage to health by prolonged exposure through inhalation.

16.2 Hazard statements (SECTION 3)

H373 May cause damage to organs through prolonged or repeated exposure.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H315 Causes skin irritation.
H335 May cause respiratory irritation.
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure through inhalation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H318 Causes serious eye damage.
H314 Causes severe skin burns and eye damage.
H312 Harmful in contact with skin.
H331 Toxic if inhaled.

Powermix Härter (Iso)

16.3 Abbreviations and acronyms:

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
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
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
IUCLID = International Uniform Chemical Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
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
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

16.4 Other information

Customs Tariff

not determined

Classification procedure

Carc. 2: H351 Suspected of causing cancer. (Calculation method)
Acute Tox. 4: H332 Harmful if inhaled. (Calculation method)
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure. (Calculation method)
Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method)
Skin Irrit. 2: H315 Causes skin irritation. (Calculation method)
STOT SE 3: H335 May cause respiratory irritation. (Calculation method)
Resp. Sens. 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)

Modified position

none

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SECTION 1: Identification of the substance / preparation and of the company

1.1 Product identifier

Powermix Härter (Iso):

Valid for following types:

PMX 2120, PMX 5120, PMX 2444, PMX 2445, PMX 5045, PMX 5145, PMX 5245, PMX 2445-2, PMX 5045-2,

PMX 2446, PMX 5046, PMX 5146, PMX 5646, PMX 2470, PMX 5030, PMX 5050, PMX 5070, PMX 5170, PMX 5270,

PMX 5570, PMX 5670, PMX 2471, PMX 5031, PMX 5051, PMX 5071, PMX 5271, PMX 5671, PMX 2471-2, PMX 5071-2,

PMX 2570-2, PMX 5570-2, PMX 5072, PMX 5272, PMX 5672, PMX 5073, PMX 5273

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

1.2.1 Relevant uses

Resin
Adhesive

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company Voelkel Industrie Produkte GmbH
Frauenstrasse 31
82216 Maisach / GERMANY
Phone +49 (0) 8141 35 549 0
Fax +49 (0) 8141 35 549 99
Homepage www.vip-gmbh.com
E-mail info@vip-gmbh.com

Address enquiries to

Technical information info@vip-gmbh.com

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency phone

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Skin Irrit. 2: H315 Causes skin irritation.
Eye Dam. 1: H318 Causes serious eye damage.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

2.1.2 Classification according to Directive 67/548/EEC or 1999/45/EC

Xi, Irritant - R 36/38: Irritating to eyes and skin.
Sensitizing. - R 43: May cause sensitisation by skin contact.
R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Labelling according to Regulation (EC) 1272/2008

Hazard pictograms



Signal word

DANGER

Contains:

4,4'-Methylenebis(cyclohexylamine)

Hazard statements

H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective gloves/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

2.3 Other hazards

Human health dangers

People who are allergic to amines should avoid the use of the product.

Other hazards

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

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
50 - <100	Ethylenediamine, propoxylated
	CAS: 25214-63-5, EINECS/ELINCS: 500-035-6
	GHS/CLP: Eye Irrit. 2: H319
	EEC: Xi, R 36
< 5	4,4'-Methylenebis(cyclohexylamine)
	CAS: 1761-71-3, EINECS/ELINCS: 217-168-8, ECB-Nr.: 01-2119541673-38
	GHS/CLP: Acute Tox. 4: H302 - Skin Corr. 1A: H314 - Eye Dam. 1: H318 - Skin Sens. 1: H317 - STOT RE 2: H373 - Aquatic Chronic 2: H411
	EEC: C-N, R 35-22-43-51/53-48/22
< 5	Trimethoxyvinylsilane
	CAS: 2768-02-7, EINECS/ELINCS: 220-449-8, ECB-Nr.: 01-2119513215-52-XXXX
	GHS/CLP: Flam. Liq. 3: H226 - Acute Tox. 4: H332
	EEC: Xn, R 10-20

Comment on component parts

Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%. For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	Remove contaminated soaked clothing immediately and dispose of safely.
Inhalation	Remove the victim into fresh air and keep him calm. In the event of symptoms seek for medical treatment.
Skin contact	In case of contact with skin wash off immediately with soap and water. Consult a doctor if skin irritation persists.
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 out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Carbon dioxide.
Dry powder.
Sand.

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.

5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Use personal protective equipment.
High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, universal absorbent, 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.
Vacuuming in situ required.
Keep away from all sources of ignition - Refrain from smoking.
Do not eat, drink or smoke when using this product.
Wash hands before breaks and after work.
Use barrier skin cream.
Contaminated work clothing should not be allowed out of the workplace.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.
Do not store together with oxidizing agents.
Keep container tightly closed.
Keep container in a well-ventilated place.
Store in a dry place.
Do not keep at temperatures above 50 °C.

7.3 Specific end use(s)

See product use, SECTION 1.2

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SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

not applicable

DNEL

Range [%]	Substance
< 5	Trimethoxyvinylsilane, CAS: 2768-02-7
	Industrial, inhalative, Acute - systemic effects: 4,9 mg/m ³ .
	Industrial, inhalative, Long-term - systemic effects: 4,9 mg/m ³ .
	Industrial, dermal, Long-term - systemic effects: 0,69 mg/kg bw/d.
< 5	4,4'-Methylenebis(cyclohexylamine), CAS: 1761-71-3
	Industrial, dermal, Long-term - systemic effects: 0,1 mg/kg bw/d.
	Industrial, inhalative, Long-term - systemic effects: 1 mg/m ³ .
	general population, oral, Long-term - systemic effects: 0,06 mg/kg bw/d.
	general population, dermal, Long-term - systemic effects: 0,06 mg/kg bw/d.
	general population, inhalative, Long-term - systemic effects: 0,21 mg/m ³ .

PNEC

Range [%]	Substance
< 5	Trimethoxyvinylsilane, CAS: 2768-02-7
	sewage treatment plants (STP), 110 mg/l.
	seawater, 0,034 mg/l.
	freshwater, 0,34 mg/l.
< 5	4,4'-Methylenebis(cyclohexylamine), CAS: 1761-71-3
	soil, 0,072 mg/kg dw.
	sediment (seawater), 0,039 mg/kg dw.
	sediment (freshwater), 0,39 mg/kg dw.
	sewage treatment plants (STP), 80 mg/l.
	seawater, 0,0008 mg/l.
	freshwater, 0,008 mg/l.

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8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	safety glasses
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. In full contact: Nitrile rubber, >480 min (EN 374). Butyl rubber, >480 min (EN 374). PVC (EN 374). In splash contact Nitrile rubber, >120 min (EN 374). butyl rubber, > 120 min (EN 374)
Skin protection	Protective overalls.
Other	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier. Do not inhale vapours. Avoid contact with eyes and skin.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, combination filter A-P2.
Thermal hazards	not applicable
Delimitation and monitoring of the environmental exposition	See SECTION 6+7.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	black
Odor	perceptible
Odour threshold	not determined
pH-value	not determined
pH-value [1%]	not determined
Boiling point [°C]	not determined
Flash point [°C]	> 150
Flammability [°C]	> 300 The product is not explosive.
Lower explosion limit	not determined
Upper explosion limit	not determined
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	1,02 (23°C)
Bulk density [kg/m³]	not applicable
Solubility in water	immiscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	3000 mPas (23°C)
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not self-igniting
Decomposition temperature [°C]	not determined

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

See SECTION 10.3.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with oxidizing agents.

Reactions with isocyanate.

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

See SECTION 10.3.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
ATE-mix, oral, > 2000 mg/kg.

Range [%]	Substance
50 - <100	Ethylenediamine, propoxylated, CAS: 25214-63-5
	LD50, oral, Rat: > 2000 mg/kg.
< 5	Trimethoxyvinylsilane, CAS: 2768-02-7
	LD50, inhalative, Rat: 16,8 mg/l (4 h) (OECD TG 403).
	LD50, dermal, Rabbit: 3540 mg/kg (RTECS).
	LD50, oral, Rat: 7120 mg/kg (OECD TG 401).
	NOAEL, inhalative, Rat: 0,058 mg/l (98 d).
	NOAEL, oral, Rat: < 62,5 mg/kg (28 d) (OECD TG 422).
< 5	4,4'-Methylenebis(cyclohexylamine), CAS: 1761-71-3
	LD50, dermal, Rabbit: 2110 mg/kg.
	LD50, oral, Rat: 625 mg/kg.

Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
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. Toxicological data of complete product are not available.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
50 - <100	Ethylenediamine, propoxylated, CAS: 25214-63-5
	LC50, (96h), Brachidanio rerio: > 100 mg/l.
	EC50, (48h), Daphnia magna: > 100 mg/l.
	IC50, (72h), Desmodesmus subspicatus: > 100 mg/l.
< 5	Trimethoxyvinylsilane, CAS: 2768-02-7
	LC50, (96h), Oncorhynchus mykiss: 191 mg/l.
	EC50, Pseudokirchneriella subcapitata: 210 mg/l (7 d) (US-EPA).
	EC50, (48h), Daphnia magna: 168,7 mg/l (92/69/EWG C.2).
	EC10, Pseudomonas putida: 1000 mg/l (5 h).
< 5	4,4'-Methylenebis(cyclohexylamine), CAS: 1761-71-3
	LC50, (96h), Leuciscus idus: 46 - 100 mg/l.
	EC50, (72h), Algae: 140 - 200 mg/l.
	EC50, (48h), Daphnia magna: 6,84 mg/l.

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12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	The product is only slightly biodegradable.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Do not discharge product unmonitored into the environment or into the drainage.
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.
For recycling, consult manufacturer.

Waste no. (recommended)

080409*

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended)

150110*

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

Marine transport in accordance with IMDG NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

Powermix Harz (Polyol)

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS 1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC

TRANSPORT-REGULATIONS DOT-Classification, ADR (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011).
CHIP 3/ CHIP 4

- Observe employment restrictions for people yes

- VOC (1999/13/CE) ca. 63 %

15.2 Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1 R-phrases (SECTION 3)

R 36: Irritating to eyes.
R 35: Causes severe burns.
R 22: Harmful if swallowed.
R 43: May cause sensitisation by skin contact.
R 51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 48/22: Harmful - danger of serious damage to health by prolonged exposure if swallowed.
R 10: Flammable.
R 20: Harmful by inhalation.

16.2 Hazard statements (SECTION 3)

H332 Harmful if inhaled.
H226 Flammable liquid and vapour.
H411 Toxic to aquatic life with long lasting effects.
H373 May cause damage to hearing organs through prolonged or repeated exposure.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H314 Causes severe skin burns and eye damage.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.

Powermix Harz (Polyol)

16.3 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
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DNEL = Derived No Effect Level
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PBT = Persistent, Bioaccumulative and Toxic substance
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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

16.4 Other information

Customs Tariff

not determined

Classification procedure

Skin Irrit. 2: H315 Causes skin irritation. (Calculation method)
Eye Dam. 1: H318 Causes serious eye damage. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects. (Calculation method)

Modified position

none

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