

Revision date 02/10/2023

Revision Number 2.53

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

<b>Product Name</b>	Polyurethane Resin UR5634, Part A
<b>Product Code(s)</b>	UR5634A, EUR5634C50ML, EUR5634RP250G, EUR5634K5K, EUR5634K25K, ZE
<b>Safety data sheet number</b>	01148
<b>Unique Formula Identifier (UFI)</b>	5J53-D027-G000-FGN0
<b>Pure substance/mixture</b>	Mixture

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

<b>Recommended use</b>	Resin
<b>Uses advised against</b>	No specific uses advised against are identified

**1.3. Details of the supplier of the safety data sheet**

<b><u>Manufacturer</u></b>	<b><u>Supplier</u></b>
ELECTROLUBE MacDermid Alpha Electronics Solutions ASHBY PARK, COALFIELD WAY, ASHBY DE LA ZOUCH, LEICESTERSHIRE LE65 1JR UNITED KINGDOM	HK WENTWORTH LIMITED 32 RUE DE TOURNENFILS 91540 MENNECY FRANCE
+44 (0)1530 419600 +44 (0)1530 416640 info@electrolube.com	+33 (0) 1 82 88 47 94 info@electrolube.com

For further information, please contact

<b>E-mail address</b>	info@electrolube.com
-----------------------	----------------------

**1.4. Emergency telephone number**

<b>Emergency Telephone</b>	POISON INFORMATION CENTRE (Beaumont Hospital, Republic of Ireland only) +353 (0)1 809 2166 (08:00 - 22:00)
----------------------------	--

**Emergency Telephone - IN CASE OF EMERGENCY CALL: +44 1865 407333 (24hr, Provided by Carechem 24)****SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

Classification according to

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

Skin sensitisation	Category 1 - (H317)
Chronic aquatic toxicity	Category 3 - (H412)

## 2.2. Label elements

Contains Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate



### Signal word

Warning

### Hazard statements

H317 - May cause an allergic skin reaction

H412 - Harmful to aquatic life with long lasting effects

### Precautionary Statements - EU (§28, 1272/2008)

P261 - Avoid breathing vapours/spray.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302 + P352 - IF ON SKIN: Wash with plenty of water.

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

## 2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Propylidynetrimethanol 77-99-6	1-5	No data available	201-074-9	Repr. 2 (H361)	-	-	-
Reaction mass of	0.1-1	01-2119491304-40-00	915-687-0	Aquatic Chronic 1	-	-	-

bis(1,2,2,6,6-penta methyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentameth yl-4-piperidyl sebacate 1065336-91-5		00		(H410) Aquatic Acute 1 (H400) Skin Sens. 1A (H317)			
1-Methoxy-2-propan ol 107-98-2	<0.1	01-2119457435-35-00 00	203-539-1	Flam. Liq. 3 (H226) STOT SE 3 (H336)	-	-	-

**Full text of H- and EUH-phrases: see section 16**

Acute Toxicity Estimate

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Propylidynetrimethanol 77-99-6	14100	10000	No data available	No data available	No data available
1-Methoxy-2-propanol 107-98-2	5000	13000	No data available	34.1234	No data available

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (Regulation (EC) No. 1907/2006 (REACH), Article 59)

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.
<b>Ingestion</b>	Rinse mouth.

### 4.2. Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Itching. Rashes. Hives.
<b>Effects of Exposure</b>	No information available.

### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Note to doctors</b>	May cause sensitisation in susceptible persons. Treat symptomatically.
------------------------	--

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards arising from the chemical** Product is or contains a sensitiser. May cause sensitisation by skin contact.

### 5.3. Advice for firefighters

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**For emergency responders** Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

**Environmental precautions** See Section 12 for additional Ecological Information.

### 6.3. Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off

contaminated clothing and wash it before reuse.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

## 7.2. Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.

## 7.3. Specific end use(s)

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

# SECTION 8: Exposure controls/personal protection

## 8.1. Control parameters

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Butane-1,4-diol 110-63-4	-	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup> STEL 200 ppm STEL 800 mg/m <sup>3</sup>	-	-	-
diisooctyl 2,2'-[(diocetylstannylene)bi s(thio)]diacetate 26401-97-8	-	TWA: 0.1 mg/m <sup>3</sup> STEL 0.2 mg/m <sup>3</sup> H*	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup> D*	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>
1-Methoxy-2-propanol 107-98-2	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> *	TWA: 50 ppm TWA: 187 mg/m <sup>3</sup> STEL 50 ppm STEL 187 mg/m <sup>3</sup> Ceiling: 50 ppm Ceiling: 187 mg/m <sup>3</sup> H*	TWA: 50 ppm TWA: 184 mg/m <sup>3</sup> STEL: 100 ppm STEL: 369 mg/m <sup>3</sup> D*	STEL: 150 ppm STEL: 568.0 mg/m <sup>3</sup> TWA: 100 ppm TWA: 375.0 mg/m <sup>3</sup> K*	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup>
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
diisooctyl 2,2'-[(diocetylstannylene)bi s(thio)]diacetate 26401-97-8	-	TWA: 0.1 mg/m <sup>3</sup> Ceiling: 0.2 mg/m <sup>3</sup> D*	TWA: 0.1 mg/m <sup>3</sup> H* STEL: 0.2 mg/m <sup>3</sup> except Tri-n-butyltin compounds	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup> A*	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup> iho*
1-Methoxy-2-propanol 107-98-2	* STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> TWA: 100 ppm TWA: 375 mg/m <sup>3</sup>	TWA: 270 mg/m <sup>3</sup> Ceiling: 550 mg/m <sup>3</sup> D*	TWA: 50 ppm TWA: 185 mg/m <sup>3</sup> H* STEL: 568 mg/m <sup>3</sup> STEL: 150 ppm	S+ TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> A*	TWA: 100 ppm TWA: 370 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup> iho*
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Butane-1,4-diol 110-63-4	-	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	-	-	-
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-h ydroxyphenyl)propionate]	-	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> Peak: 4 mg/m <sup>3</sup>	-	-

41484-35-9					
diisooctyl 2,2'-[(dioctylstannylene)bi s(thio)]diacetate 26401-97-8	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>	TWA: 0.002 ppm TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.002 ppm TWA: 0.0098 mg/m <sup>3</sup> Peak: 0.004 ppm Peak: 0.0196 mg/m <sup>3</sup> *	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup> *	TWA: 0.02 mg/m <sup>3</sup> b*
1-Methoxy-2-propanol 107-98-2	TWA: 50 ppm TWA: 188 mg/m <sup>3</sup> STEL: 100 ppm STEL: 375 mg/m <sup>3</sup> *	TWA: 100 ppm TWA: 370 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 370 mg/m <sup>3</sup> Peak: 200 ppm Peak: 740 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 360 mg/m <sup>3</sup> STEL: 300 ppm STEL: 1080 mg/m <sup>3</sup> *	TWA: 375 mg/m <sup>3</sup> TWA: 100 ppm STEL: 568 mg/m <sup>3</sup> STEL: 150 ppm b*
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Propylidynetrimethanol 77-99-6	-	-	-	-	Ceiling: 5 ppm
diisooctyl 2,2'-[(dioctylstannylene)bi s(thio)]diacetate 26401-97-8	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>	-	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup> cute*	-	STEL: 0.2 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> O*
1-Methoxy-2-propanol 107-98-2	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> cute*	TWA: 50 ppm TWA: 184 mg/m <sup>3</sup> STEL: 100 ppm STEL: 368 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> Ada*	STEL: 300 mg/m <sup>3</sup> STEL: 75 ppm TWA: 190 mg/m <sup>3</sup> TWA: 50 ppm O*
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
diisooctyl 2,2'-[(dioctylstannylene)bi s(thio)]diacetate 26401-97-8	-	-	-	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup> H*	-
1-Methoxy-2-propanol 107-98-2	STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> Peau*	STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> skin* TWA: 100 ppm TWA: 375 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 563 mg/m <sup>3</sup> H*	TWA: 50 ppm TWA: 180 mg/m <sup>3</sup> STEL: 75 ppm STEL: 225 mg/m <sup>3</sup> H*	STEL: 360 mg/m <sup>3</sup> TWA: 180 mg/m <sup>3</sup> skóra*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Butane-1,4-diol 110-63-4	-	-	-	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup> STEL: 200 ppm STEL: 800 mg/m <sup>3</sup>	-
diisooctyl 2,2'-[(dioctylstannylene)bi s(thio)]diacetate 26401-97-8	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> K* Ceiling: 0.2 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.002 ppm STEL: 0.004 ppm STEL: 0.02 mg/m <sup>3</sup> K*	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup> vía dérmica*
1-Methoxy-2-propanol 107-98-2	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> P*	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> K* Ceiling: 568 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> K*	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 568 mg/m <sup>3</sup> vía dérmica*
Chemical name	Sweden		Switzerland		United Kingdom
Propylidynetrimethanol 77-99-6	NGV: 5 mg/m <sup>3</sup>		-		-
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxy phenyl)propionate] 41484-35-9	-		TWA: 3 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup>		-
diisooctyl 2,2'-[(dioctylstannylene)bis(thio)]	NGV: 0.1 mg/m <sup>3</sup> H*		TWA: 0.1 mg/m <sup>3</sup> TWA: 0.004 ppm		TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>

]diacetate 26401-97-8		TWA: 0.02 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup> STEL: 0.004 ppm STEL: 0.02 mg/m <sup>3</sup> H*	Sk*
1-Methoxy-2-propanol 107-98-2	Bindande KGV: 150 ppm Bindande KGV: 568 mg/m <sup>3</sup> NGV: 50 ppm NGV: 190 mg/m <sup>3</sup> H*	TWA: 100 ppm TWA: 360 mg/m <sup>3</sup> STEL: 200 ppm STEL: 720 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup> Sk*

**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
1-Methoxy-2-propanol 107-98-2	-	-	-	15 mg/L (urine - 1-Methoxypropan-2- ol end of shift) 15 mg/L - BAT (end of exposure or end of shift) urine	15 mg/L (urine - 1-Methoxypropan-2- ol end of shift)
Chemical name	Slovenia	Spain	Switzerland	United Kingdom	
1-Methoxy-2-propanol 107-98-2	15 mg/L - urine (1-Methoxypropan-2-ol) - at the end of the work shift	-	20 mg/L (urine - 1-Methoxypropanol-2 end of shift) 221.9 µmol/L (urine - 1-Methoxypropanol-2 end of shift)	-	

#### Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol 37625-56-2	-	1.1 mg/kg bw/day [4] [6]	3.5 mg/m <sup>3</sup> [4] [6]
2-Oxepanone, polymer with 1,4-butanediol 31831-53-5	-	5 mg/kg bw/day [4] [6]	18 mg/m <sup>3</sup> [4] [6]
Propylidynetrimethanol 77-99-6	-	0.94 mg/kg bw/day [4] [6]	3.3 mg/m <sup>3</sup> [4] [6]
Triethyl orthoformate 122-51-0	-	1.22 mg/kg bw/day [4] [6]	1.07 mg/m <sup>3</sup> [4] [6]
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate 1065336-91-5	-	0.5 mg/kg bw/day [4] [6]	0.68 mg/m <sup>3</sup> [4] [6]
Butane-1,4-diol 110-63-4	-	19 mg/kg bw/day [4] [6]	136 mg/m <sup>3</sup> [4] [6] 958 mg/m <sup>3</sup> [4] [7]
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl) ]propionate] 41484-35-9	-	13.8 mg/kg bw/day [4] [6]	4.9 mg/m <sup>3</sup> [4] [6]
Hexan-6-olide	-	2.98 mg/kg bw/day [4] [6]	10.4 mg/m <sup>3</sup> [4] [6]

Chemical name	Oral	Dermal	Inhalation
502-44-3			14 mg/m <sup>3</sup> [5] [6]
diisooctyl 2,2'-[(dioctylstannylene)bis(thio)]diacetate 26401-97-8	-	83 mg/kg bw/day [4] [6]	0.02 mg/m <sup>3</sup> [4] [6]
1-Methoxy-2-propanol 107-98-2	-	183 mg/kg bw/day [4] [6]	369 mg/m <sup>3</sup> [4] [6] 553.5 mg/m <sup>3</sup> [4] [7] 553.5 mg/m <sup>3</sup> [5] [7]

#### Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol 37625-56-2	0.6 mg/kg bw/day [4] [6]	-	1 mg/m <sup>3</sup> [4] [6]
2-Oxepanone, polymer with 1,4-butanediol 31831-53-5	2.5 mg/kg bw/day [4] [6]	-	4 mg/m <sup>3</sup> [4] [6]
Propylidynetrimethanol 77-99-6	0.34 mg/kg bw/day [4] [6]	-	0.58 mg/m <sup>3</sup> [4] [6]
Triethyl orthoformate 122-51-0	0.61 mg/kg bw/day [4] [6]	-	0.264 mg/m <sup>3</sup> [4] [6]
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate 1065336-91-5	0.05 mg/kg bw/day [4] [6]	-	0.17 mg/m <sup>3</sup> [4] [6]
Butane-1,4-diol 110-63-4	8 mg/kg bw/day [4] [6]	-	29 mg/m <sup>3</sup> [4] [6] 340 mg/m <sup>3</sup> [4] [7]
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] 41484-35-9	0.69 mg/kg bw/day [4] [6]	-	-
Hexan-6-olide 502-44-3	1.43 mg/kg bw/day [4] [6]	-	2.5 mg/m <sup>3</sup> [4] [6] 7 mg/m <sup>3</sup> [5] [6]
1-Methoxy-2-propanol 107-98-2	33 mg/kg bw/day [4] [6]	-	43.9 mg/m <sup>3</sup> [4] [6]

#### Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol 37625-56-2	0.15 mg/L	1.5 mg/L	0.015 mg/L	-	-
2-Oxepanone, polymer with 1,4-butanediol 31831-53-5	0.072 mg/L	0.72 mg/L	0.0072 mg/L	-	-
Triethyl orthoformate	0.17451 mg/L	1.7451 mg/L	0.017451 mg/L	-	-



Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
122-51-0					
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate 1065336-91-5	0.0022 mg/L	0.009 mg/L	0.00022 mg/L	-	-
Butane-1,4-diol 110-63-4	0.813 mg/L	8.13 mg/L	0.0813 mg/L	-	-
Hexan-6-olide 502-44-3	0.204 mg/L	2.04 mg/L	0.0204 mg/L	-	-
diisooctyl 2,2'-[(dioctylstannylene)bis(thio)]diacetate 26401-97-8	0.02412 mg/L	0.2412 mg/L	0.002412 mg/L	0.02412 mg/L	-
1-Methoxy-2-propanol 107-98-2	10 mg/L	100 mg/L	1 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol 37625-56-2	-	-	670 mg/L	-	-
2-Oxepanone, polymer with 1,4-butanediol 31831-53-5	-	-	461 mg/L	-	-
Triethyl orthoformate 122-51-0	1.52 mg/kg sediment dw	0.152 mg/kg sediment dw	0.14 g/L	2.94 mg/kg soil dw	-
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate 1065336-91-5	1.05 mg/kg sediment dw	0.11 mg/kg sediment dw	1 mg/L	0.21 mg/kg soil dw	-
Butane-1,4-diol 110-63-4	3.61 mg/kg sediment dw	0.361 mg/kg sediment dw	1554 mg/L	0.244 mg/kg soil dw	-
Hexan-6-olide 502-44-3	-	-	32 mg/L	-	-
diisooctyl 2,2'-[(dioctylstannylene)bis(thio)]diacetate 26401-97-8	-	244000 mg/kg sediment dw	1 mg/L	-	-
1-Methoxy-2-propanol 107-98-2	52.3 mg/kg sediment dw	5.2 mg/kg sediment dw	100 mg/L	4.59 mg/kg soil dw	-

## 8.2. Exposure controls

<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas.
<b>Personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Hand protection</b>	Wear suitable gloves.
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Environmental exposure controls</b>	No information available.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Liquid
<b>Colour</b>	clear
<b>Odour</b>	Characteristic.
<b>Odour threshold</b>	No information available

<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>
<b>Melting point / freezing point</b>	No data available	None known
<b>Initial boiling point and boiling range</b>	No data available	None known
<b>Flammability</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Flash point</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>		None known
<b>pH</b>	No data available	None known
<b>pH (as aqueous solution)</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	900 mPa s @ 23°C/73.4°F	None known
<b>Water solubility</b>	No data available	None known
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Vapour pressure</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Bulk density</b>	1.06 kg/l	
<b>Liquid Density</b>	No data available	
<b>Relative vapour density</b>	No data available	None known
<b>Particle characteristics</b>		
<b>Particle Size</b>	No information available	
<b>Particle Size Distribution</b>	No information available	

### 9.2. Other information

9.2.1. Information with regards to physical hazard classes

Explosive properties	Not considered to be explosive.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidizing.

9.2.2. Other safety characteristics  
No information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	No information available.
------------	---------------------------

### 10.2. Chemical stability

Stability	Stable under normal conditions.
-----------	---------------------------------

#### Explosion data

Sensitivity to mechanical impact	None.
----------------------------------	-------

Sensitivity to static discharge	None.
---------------------------------	-------

### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.
------------------------------------	-------------------------------

### 10.4. Conditions to avoid

Conditions to avoid	None known based on information supplied.
---------------------	---

### 10.5. Incompatible materials

Incompatible materials	None known based on information supplied.
------------------------	---

### 10.6. Hazardous decomposition products

Hazardous decomposition products	None known based on information supplied.
----------------------------------	---

## SECTION 11: Toxicological information

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

#### Information on likely routes of exposure

##### Product Information

Inhalation	Specific test data for the substance or mixture is not available.
------------	---

Eye contact	Specific test data for the substance or mixture is not available.
-------------	---

Skin contact	May cause sensitisation by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components).
--------------	---

Ingestion	Specific test data for the substance or mixture is not available.
-----------	---

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** Itching. Rashes. Hives.

**Acute toxicity**

**Numerical measures of toxicity**

No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	15,304.30 mg/kg
ATEmix (dermal)	16,633.70 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapour)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	99,999.00 mg/l

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Propylidynetrimethanol	= 14100 mg/kg ( Rat )	> 10000 mg/kg ( Rabbit )	> 0.85 mg/L ( Rat ) 4 h
1-Methoxy-2-propanol	= 5000 mg/kg ( Rat )	= 13 g/kg ( Rabbit )	> 7559 ppm ( Rat ) 6 h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** Based on available data, the classification criteria are not met.

**Respiratory or skin sensitisation** May cause an allergic skin reaction.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT - single exposure** Based on available data, the classification criteria are not met.

**STOT - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

**11.2. Information on other hazards**

**11.2.1. Endocrine disrupting properties**

**Endocrine disrupting properties** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### 11.2.2. Other information

**Other adverse effects** No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Ecotoxicity** Harmful to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Propylidynetrimethanol	-	-	-	EC50: =13000mg/L (48h, Daphnia species) EC50: 10330 - 16360mg/L (48h, Daphnia magna)
1-Methoxy-2-propanol	-	LC50: =20.8g/L (96h, Pimephales promelas)	-	EC50: =23300mg/L (48h, Daphnia magna)

### 12.2. Persistence and degradability

**Persistence and degradability** No information available.

### 12.3. Bioaccumulative potential

**Bioaccumulation** There is no data for this product.

Chemical name	Partition coefficient
Propylidynetrimethanol	-0.47
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	2.77
1-Methoxy-2-propanol	1

### 12.4. Mobility in soil

**Mobility in soil** No information available.

### 12.5. Results of PBT and vPvB assessment

**PBT and vPvB assessment** The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment
Propylidynetrimethanol	The substance is not PBT / vPvB PBT assessment does not apply
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	The substance is not PBT / vPvB
1-Methoxy-2-propanol	The substance is not PBT / vPvB

### 12.6. Endocrine disrupting properties

**Endocrine disrupting properties** The substance/mixture does not contain components considered to have endocrine

disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### **12.7. Other adverse effects**

No information available.

### **SECTION 13: Disposal considerations**

#### **13.1. Waste treatment methods**

<b>Waste from residues/unused products</b>	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
<b>Contaminated packaging</b>	Do not reuse empty containers.

### **SECTION 14: Transport information**

#### **IATA**

<b>14.1 UN number or ID number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	None

#### **IMDG**

<b>14.1 UN number or ID number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	None
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	No information available

#### **RID**

<b>14.1 UN number or ID number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	None

#### **ADR**

<b>14.1 UN number or ID number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	

Special Provisions

None

## SECTION 15: Regulatory information

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

Chemical name	French RG number
1-Methoxy-2-propanol - 107-98-2	RG 84

**Water hazard class (WGK)** obviously hazardous to water (WGK 2)

#### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

#### Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

#### Persistent Organic Pollutants

Not applicable

#### Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

#### International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

#### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AIIC** - Australian Inventory of Industrial Chemicals  
**NZIoC** - New Zealand Inventory of Chemicals

## 15.2. Chemical safety assessment

### Chemical Safety Report

No information available

## SECTION 16: Other information

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### Full text of H-Statements referred to under section 3

H226 - Flammable liquid and vapour  
H302 - Harmful if swallowed  
H317 - May cause an allergic skin reaction  
H319 - Causes serious eye irritation  
H336 - May cause drowsiness or dizziness  
H361 - Suspected of damaging fertility or the unborn child  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H413 - May cause long lasting harmful effects to aquatic life

#### Legend

SVHC: Substances of Very High Concern for Authorisation:

#### Legend Section 8: Exposure controls/personal protection

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)  
Ceiling Maximum limit value \* Skin designation  
+ Sensitisers

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

#### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
European Chemicals Agency (ECHA) (ECHA\_API)



EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 02/10/2023

**Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)**

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**

Revision date 02/10/2023

Revision Number 1.53

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

**Product Name** Polyurethane Resin UR5634, Part B

**Product Code(s)** UR5634B, EUR5634C50ML, EUR5634RP250G, EUR5634K5K, EUR5634K25K, ZE

**Safety data sheet number** 01100

**Unique Formula Identifier (UFI)** RE13-20X5-S008-Q3NW

**Pure substance/mixture** Substance

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

**Recommended use** Resin

**Uses advised against** No specific uses advised against are identified

**1.3. Details of the supplier of the safety data sheet**

<b><u>Manufacturer</u></b>	<b><u>Supplier</u></b>
ELECTROLUBE MacDermid Alpha Electronics Solutions ASHBY PARK, COALFIELD WAY, ASHBY DE LA ZOUCH, LEICESTERSHIRE LE65 1JR UNITED KINGDOM	HK WENTWORTH LIMITED 32 RUE DE TOURNENFILS 91540 MENNECY FRANCE
+44 (0)1530 419600 +44 (0)1530 416640 info@electrolube.com	+33 (0) 1 82 88 47 94 info@electrolube.com

For further information, please contact

**E-mail address** info@electrolube.com

**1.4. Emergency telephone number**

**Emergency Telephone** POISON INFORMATION CENTRE (Beaumont Hospital, Republic of Ireland only) +353 (0)1 809 2166 (08:00 - 22:00)

**Emergency Telephone - IN CASE OF EMERGENCY CALL: +44 1865 407333 (24hr, Provided by Carechem 24)****SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

Classification according to

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

Acute toxicity - Inhalation (Vapours)	Category 4 - (H332)
Skin sensitisation	Category 1 - (H317)
Specific target organ toxicity — single exposure	Category 3 - (H335)

## 2.2. Label elements

Contains Hexamethylene diisocyanate, oligomers, hexamethylene-di-isocyanate



### Signal word

Warning

### Hazard statements

H317 - May cause an allergic skin reaction

H332 - Harmful if inhaled

H335 - May cause respiratory irritation Contains hexamethylene-di-isocyanate

### Precautionary Statements - EU (§28, 1272/2008)

P261 - Avoid breathing vapours/spray.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302 + P352 - IF ON SKIN: Wash with plenty of water.

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

P312 - Call a POISON CENTER or doctor if you feel unwell.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

## 2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Hexamethylene	60-100	01-2119485796-17-00	500-060-2	Acute Tox. 4 (H332)	-	-	-

diisocyanate, oligomers 28182-81-2		02		Skin Sens. 1 (H317) STOT SE 3 (H335)			
hexamethylene-di-isocyanate 822-06-0	<0.1	01-2119457571-37-00 01	212-485-8	Skin Sens. 1 (H317) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Irrit. 2 (H315) STOT SE 3 (H335) Acute Tox. 3 (H331)	Resp. Sens. 1 :: C>=0.5% Skin Sens. 1 :: C>=0.5%	-	-

**Full text of H- and EUH-phrases: see section 16**

#### Acute Toxicity Estimate

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Hexamethylene diisocyanate, oligomers 28182-81-2	No data available	2000	4.625	No data available	No data available
hexamethylene-di-isocyanate 822-06-0	738	7000	0.06	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (Regulation (EC) No. 1907/2006 (REACH), Article 59)

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. If symptoms persist, call a doctor. If breathing has stopped, give artificial respiration. Get medical attention immediately.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapours or mists. Use personal protective equipment as required. See section 8 for more information.

### 4.2. Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Itching. Rashes. Hives. Coughing and/ or wheezing. Difficulty in breathing.
-----------------	---

Effects of Exposure No information available.

#### **4.3. Indication of any immediate medical attention and special treatment needed**

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically.

### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

#### **5.2. Special hazards arising from the substance or mixture**

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by skin contact.

#### **5.3. Advice for firefighters**

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

### **SECTION 6: Accidental release measures**

#### **6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapours or mists.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

#### **6.2. Environmental precautions**

Environmental precautions See Section 12 for additional Ecological Information.

#### **6.3. Methods and material for containment and cleaning up**

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

#### **6.4. Reference to other sections**

Reference to other sections See section 8 for more information. See section 13 for more information.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Avoid breathing vapours or mists.

#### General hygiene considerations

Do not eat, drink or smoke when using this product.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

### 7.3. Specific end use(s)

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure Limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
hexamethylene-di-isocyanate 822-06-0	-	TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup> STEL 0.005 ppm STEL 0.035 mg/m <sup>3</sup> Ceiling: 0.005 ppm Ceiling: 0.035 mg/m <sup>3</sup> Sa+ Sh+	TWA: 0.005 ppm TWA: 0.034 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> STEL: 0.07 mg/m <sup>3</sup>
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
hexamethylene-di-isocyanate 822-06-0	-	TWA: 0.035 mg/m <sup>3</sup> Ceiling: 0.07 mg/m <sup>3</sup> S+	TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup> STEL: 0.01 ppm STEL: 0.07 mg/m <sup>3</sup>	S+ TWA: 0.005 ppm TWA: 0.03 mg/m <sup>3</sup> STEL: 0.01 ppm STEL: 0.07 mg/m <sup>3</sup>	STEL: 0.035 mg/m <sup>3</sup>
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Hexamethylene diisocyanate, oligomers 28182-81-2	STEL: 1 mg/m <sup>3</sup>	-	-	-	-
hexamethylene-di-isocyanate 822-06-0	TWA: 0.01 ppm TWA: 0.075 mg/m <sup>3</sup> STEL: 0.02 ppm STEL: 0.15 mg/m <sup>3</sup> AR+	Sa+ TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup>	TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup> Peak: 0.005 ppm Peak: 0.035 mg/m <sup>3</sup> respiratory and skin sensitizer	TWA: 0.01 ppm TWA: 0.075 mg/m <sup>3</sup> STEL: 0.02 ppm STEL: 0.15 mg/m <sup>3</sup>	Sz+ TWA: 0.035 mg/m <sup>3</sup> STEL: 0.035 mg/m <sup>3</sup>
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania

hexamethylene-di-isocyanate 822-06-0	TWA: 0.005 mg/m <sup>3</sup> STEL: 0.015 mg/m <sup>3</sup> Sens+	-	TWA: 0.005 ppm TWA: 0.034 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	Ceiling: 0.01 ppm Ceiling: 0.07 mg/m <sup>3</sup> J+ TWA: 0.005 ppm TWA: 0.03 mg/m <sup>3</sup>
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
hexamethylene-di-isocyanate 822-06-0	-	-	-	TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup> A+ STEL: 0.01 ppm	STEL: 0.08 mg/m <sup>3</sup> TWA: 0.04 mg/m <sup>3</sup> skóra*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
hexamethylene-di-isocyanate 822-06-0	TWA: 0.005 ppm	TWA: 0.007 ppm TWA: 0.05 mg/m <sup>3</sup> STEL: 0.14 ppm STEL: 1 mg/m <sup>3</sup>	TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup> S+	TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup> STEL: 0.005 ppm STEL: 0.035 mg/m <sup>3</sup>	TWA: 0.005 ppm TWA: 0.035 mg/m <sup>3</sup> Sen+
Chemical name	Sweden		Switzerland		United Kingdom
hexamethylene-di-isocyanate 822-06-0	Bindande KGV: 0.005 ppm Bindande KGV: 0.03 mg/m <sup>3</sup> S+ NGV: 0.002 ppm NGV: 0.02 mg/m <sup>3</sup>		S+ TWA: 0.02 mg/m <sup>3</sup> STEL: 0.02 mg/m <sup>3</sup>		TWA: 0.02 mg/m <sup>3</sup> STEL: 0.07 mg/m <sup>3</sup> Sen+

**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
hexamethylene-di-isocyanate 822-06-0	-	10 µg/g Creatinine (urine - 4,4'-Diaminodiphenylmethane after end of work day, at the end of a work week/end of the shift) (-)	-	-	-
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
hexamethylene-di-isocyanate 822-06-0	-	-	-	15 µg/g Creatinine (urine - Hexamethylenediamine (after hydrolysis) end of shift) 15 µg/g Creatinine - BAT (end of exposure or end of shift) urine	15 µg/g Creatinine (urine - Hexamethylenediamine (after hydrolysis) end of shift)
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
hexamethylene-di-isocyanate 822-06-0	-	1 µmol/mol Creatinine (urine - urinary Diamine post task)	-	15 µg/g Creatinine - urine (1,6-Hexamethylenediamine with hydrolysis) - end of shift	
Chemical name	Slovenia	Spain	Switzerland	United Kingdom	
hexamethylene-di-isocyanate 822-06-0	15 µg/g Creatinine - urine (Hexamethylenediamine (after hydrolysis)) - at the end of the work shift	-	15 µg/g creatinine (urine - Hexamethylenediamine after hydrolysis end of shift) 14.6 nmol/mmol creatinine (urine -	1 mmol isocyanate-derived diamine/mol creatinine - urine () - end of the period of exposure	

			Hexamethylenediamine after hydrolysis end of shift)	
--	--	--	---	--

#### Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
hexamethylene-di-isocyanate 822-06-0	-	-	0.035 mg/m <sup>3</sup> [5] [6] 0.07 mg/m <sup>3</sup> [5] [7]

#### Derived No Effect Level (DNEL) - General Public

#### Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
hexamethylene-di-isocyanate 822-06-0	-	-	8.42 mg/L	-	-

## 8.2. Exposure controls

<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas.
<b>Personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Hand protection</b>	Wear suitable gloves.
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	Do not eat, drink or smoke when using this product.
<b>Environmental exposure controls</b>	No information available.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Liquid
<b>Colour</b>	Colourless light yellow
<b>Odour</b>	No characteristic odour.
<b>Odour threshold</b>	No information available



<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	< -20 °C	<-20°C/<-4°F
Initial boiling point and boiling range	> 220 °C	>220°C/>428°F @ 1.33 hPa
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Flash point	137 °C	None known
Autoignition temperature	460 °C	460°C/860°F
Decomposition temperature		None known
pH	No data available	None known
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	1200 mPa s @ 25°C/77°F	None known
Water solubility	No data available	None known
Solubility(ies)	Soluble in the following materials; Ketones., Esters., Aromatic solvents	None known
Partition coefficient	No data available	None known
Vapour pressure	No data available	None known
Relative density	No data available	None known
Bulk density	1.16 kg/l	
Liquid Density	No data available	
Relative vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

## 9.2. Other information

### 9.2.1. Information with regards to physical hazard classes

Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidizing.

### 9.2.2. Other safety characteristics

No information available

## **SECTION 10: Stability and reactivity**

### 10.1. Reactivity

Reactivity	No information available.
------------	---------------------------

### 10.2. Chemical stability

Stability	Stable under normal conditions.
-----------	---------------------------------

### Explosion data

Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.

### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.
------------------------------------	-------------------------------

### 10.4. Conditions to avoid

Conditions to avoid Excessive heat.

#### 10.5. Incompatible materials

Incompatible materials None known based on information supplied.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

### **SECTION 11: Toxicological information**

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

##### Information on likely routes of exposure

##### **Product Information**

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Harmful by inhalation. (based on components).
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	May cause sensitisation by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components).
Ingestion	Specific test data for the substance or mixture is not available.

##### Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Itching. Rashes. Hives. Coughing and/ or wheezing.

##### Acute toxicity

##### **Numerical measures of toxicity**

No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	2,001.80 mg/kg
ATEmix (inhalation-gas)	4,504.10 ppm
ATEmix (inhalation-vapour)	11.00 mg/l
ATEmix (inhalation-dust/mist)	4.63 mg/l

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Hexamethylene diisocyanate, oligomers	-	> 2000 mg/kg ( Rat )	= 18500 mg/m <sup>3</sup> ( Rat ) 1 h
hexamethylene-di-isocyanate	= 738 mg/kg ( Rat )	> 7000 mg/kg ( Rat )	= 0.06 mg/L ( Rat ) 4 h

##### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** Based on available data, the classification criteria are not met.

**Respiratory or skin sensitisation** May cause an allergic skin reaction.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT - single exposure** May cause respiratory irritation.

**STOT - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

## **11.2. Information on other hazards**

### **11.2.1. Endocrine disrupting properties**

**Endocrine disrupting properties** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### **11.2.2. Other information**

**Other adverse effects** No information available.

## **SECTION 12: Ecological information**

### **12.1. Toxicity**

#### **Ecotoxicity**

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
hexamethylene-di-isocyanate	-	LC50: =26.1mg/L (96h, Brachydanio rerio)	-	-

### **12.2. Persistence and degradability**

**Persistence and degradability** No information available.

### **12.3. Bioaccumulative potential**

**Bioaccumulation** There is no data for this product.

#### 12.4. Mobility in soil

Mobility in soil No information available.

#### 12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment
Hexamethylene diisocyanate, oligomers	The substance is not PBT / vPvB
hexamethylene-di-isocyanate	The substance is not PBT / vPvB

#### 12.6. Endocrine disrupting properties

Endocrine disrupting properties The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### 12.7. Other adverse effects

No information available.

### **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

### **SECTION 14: Transport information**

#### IATA

14.1 UN number or ID number Not regulated  
14.2 UN proper shipping name Not regulated  
14.3 Transport hazard class(es) Not regulated  
14.4 Packing group Not regulated  
14.5 Environmental hazards Not applicable  
14.6 Special precautions for user  
Special Provisions None

#### IMDG

14.1 UN number or ID number Not regulated  
14.2 UN proper shipping name Not regulated  
14.3 Transport hazard class(es) Not regulated  
14.4 Packing group Not regulated  
14.5 Environmental hazards Not applicable  
14.6 Special precautions for user  
Special Provisions None  
14.7 Maritime transport in bulk according to IMO instruments No information available

**RID**

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

**ADR**

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

**SECTION 15: Regulatory information**

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

Chemical name	French RG number
hexamethylene-di-isocyanate - 822-06-0	RG 62

**Water hazard class (WGK)** slightly hazardous to water (WGK 1)

**European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

**Authorisations and/or restrictions on use:**

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
hexamethylene-di-isocyanate - 822-06-0	Use restricted. See item 75.	-

**Persistent Organic Pollutants**

Not applicable

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009**

Not applicable

**International Inventories**

**TSCA**

Contact supplier for inventory compliance status

DSL/NDSL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AIIC** - Australian Inventory of Industrial Chemicals  
**NZIoC** - New Zealand Inventory of Chemicals

**15.2. Chemical safety assessment**

**Chemical Safety Report** No information available

**SECTION 16: Other information**

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**Full text of H-Statements referred to under section 3**

H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H319 - Causes serious eye irritation  
H331 - Toxic if inhaled  
H332 - Harmful if inhaled  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H335 - May cause respiratory irritation

**Legend**

SVHC: Substances of Very High Concern for Authorisation:

**Legend Section 8: Exposure controls/personal protection**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method

Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
European Chemicals Agency (ECHA) (ECHA\_API)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGl(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

Revision date 02/10/2023

**Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)**

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**