SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Safety data sheet according to Regulation (EC) 2020/878

Revision date 20/07/2023 **Revision Number** 1.33

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

1.1. Product identifier

Product Name RS Pro Optically Clear Polyurethane Resin, Part A

Product Code(s) 146-6593, ZP

Safety data sheet number 02079

Unique Formula Identifier (UFI) 3F1D-K046-G00P-VS4U

Pure substance/mixture Mixture

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

Supplier

RS Components Ltd
Birchington Road
Corby
Northants
NN17 9RS
+44 (0) 845 850 9900
RCustomerServicesUK@rs-components.com

RS Components Ltd
Glenview Industrial Estate
Herberton Road
Rialto
Dublin 12
+353 (0) 1 415 3100
enquiries.ie@rs-components.com

For further information, please contact

E-mail address RCustomerServicesUK@rs-components.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 -

+44 1235 239670 (24hr)

+44 (0) 1865 407333 (24hr)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute toxicity - Oral	Category 4 - (H302)
Skin sensitisation	Category 1 - (H317)

2.2. Label elements

Contains trimethoxyvinylsilane, 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
H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction

Precautionary Statements - EU (§28, 1272/2008)
P261 - Avoid breathing vapours/spray.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P280 - Wear protective gloves.
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
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)
Propane-1,2-diol, propoxylated 25322-69-4	30-60	01-2119457556-29-0000	500-039-8	Acute Tox. 4 (H302)	-	-	-
trimethoxyvinylsilane 2768-02-7	0.1-1	01-2119513215-52-0002	220-449-8	Flam. Liq. 3 (H226) Acute Tox. 4 (H332) Skin Sens. 1 (H317)	-	-	-
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	0.1-1	01-2119491304-40-0000	915-687-0	Aquatic Chronic 1 (H410) Aquatic Acute 1 (H400) Skin Sens. 1A (H317)	-	-	-
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate] 41484-35-9	0.1-1	-	255-392-8	Aquatic Chronic 4 (H413)	-	-	-
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	<0.1	-	273-028-6	Repr. 2 (H361) STOT RE 1 (H372) Acute Tox. 4 (H302) Aquatic Chronic 4 (H413)	-	-	-
1-Methoxy-2-propanol 107-98-2	<0.1	01-2119457435-35-0000	203-539-1	Flam. Liq. 3 (H226) STOT SE 3 (H336)	-	-	-
Tetramethyl orthosilicate 681-84-5	<0.1	01-2119957658-18-0000	211-656-4	Flam. Liq. 3 (H226) Skin Irrit. 2 (H315) Acute Tox. 1 (H330) Eye Dam. 1 (H318)	-	-	-

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

Acute Toxicity Estimate
No information available

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
Propane-1,2-diol, propoxylated 25322-69-4	3750	3000	No data available	No data available	No data available
trimethoxyvinylsilane 2768-02-7	7317.98	3529.38	No data available	No data available	No data available
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] 41484-35-9	6300	No data available	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
Tetramethyl orthosilicate	No data	17000	0.3922	No data available	No data available

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
681-84-5	available				

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.

Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.

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

Symptoms Itching. Rashes. Hives.

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.

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. 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
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	-	TWA: 0.1 mg/m³ STEL 0.2 mg/m³ H*	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³ D*	TWA: 0.1 mg/m³	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³
1-Methoxy-2-propanol 107-98-2	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 568 mg/m³ *	TWA: 50 ppm TWA: 187 mg/m³ STEL 50 ppm STEL 187 mg/m³ Ceiling: 50 ppm Ceiling: 187 mg/m³ H*	TWA: 50 ppm TWA: 184 mg/m³ STEL: 100 ppm STEL: 369 mg/m³ D*	STEL: 150 ppm STEL: 568.0 mg/m³ TWA: 100 ppm TWA: 375.0 mg/m³ K*	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 568 mg/m³
Tetramethyl orthosilicate 681-84-5	-	TWA: 1 ppm TWA: 6 mg/m³ STEL 2 ppm STEL 12 mg/m³	TWA: 1 ppm TWA: 6 mg/m³	-	-
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	-	TWA: 0.1 mg/m³ Ceiling: 0.2 mg/m³ D*	TWA: 0.1 mg/m³ H* STEL: 0.2 mg/m³ except Tri-n-butyltin compounds	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³ A*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ iho*
1-Methoxy-2-propanol 107-98-2	* STEL: 150 ppm STEL: 568 mg/m³ TWA: 100 ppm TWA: 375 mg/m³	TWA: 270 mg/m³ Ceiling: 550 mg/m³ D*	TWA: 50 ppm TWA: 185 mg/m³ H* STEL: 568 mg/m³ STEL: 150 ppm	S+ TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 568 mg/m³ A*	TWA: 100 ppm TWA: 370 mg/m³ STEL: 150 ppm STEL: 560 mg/m³ iho*
Tetramethyl orthosilicate 681-84-5	-	-	STEL: 1 ppm STEL: 6 mg/m³	-	TWA: 0.3 ppm TWA: 2 mg/m³ STEL: 1 ppm STEL: 6 mg/m³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] 41484-35-9	-	TWA: 2 mg/m³	TWA: 2 mg/m³ Peak: 4 mg/m³	-	-
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³	TWA: 0.0018 ppm TWA: 0.009 mg/m³	TWA: 0.004 ppm TWA: 0.02 mg/m³ Peak: 0.004 ppm Peak: 0.02 mg/m³	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³ *	TWA: 0.02 mg/m³ b*
1-Methoxy-2-propanol 107-98-2	TWA: 50 ppm TWA: 188 mg/m³ STEL: 100 ppm STEL: 375 mg/m³ *	TWA: 100 ppm TWA: 370 mg/m³	TWA: 100 ppm TWA: 370 mg/m³ Peak: 200 ppm Peak: 740 mg/m³	TWA: 100 ppm TWA: 360 mg/m³ STEL: 300 ppm STEL: 1080 mg/m³ *	TWA: 375 mg/m³ TWA: 100 ppm STEL: 568 mg/m³ STEL: 150 ppm b*
Tetramethyl orthosilicate 681-84-5	TWA: 1 ppm TWA: 6 mg/m³	TWA: 0.3 ppm TWA: 2 mg/m³	-	TWA: 1 ppm TWA: 6 mg/m³ STEL: 5 ppm STEL: 30 mg/m³	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³	-	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³ cute*	-	STEL: 0.2 mg/m³ TWA: 0.1 mg/m³ O*
1-Methoxy-2-propanol 107-98-2	TWA: 100 ppm TWA: 375 mg/m³	TWA: 100 ppm TWA: 375 mg/m³	TWA: 50 ppm TWA: 184 mg/m³	TWA: 100 ppm TWA: 375 mg/m³	STEL: 300 mg/m³ STEL: 75 ppm

	STEL: 150 ppm STEL: 568 mg/m³	STEL: 150 ppm STEL: 568 mg/m³ cute*	STEL: 100 ppm STEL: 368 mg/m³	STEL: 150 ppm STEL: 568 mg/m³ Ada*	TWA: 190 mg/m³ TWA: 50 ppm O*
Tetramethyl orthosilicate 681-84-5	TWA: 1 ppm TWA: 6 mg/m³ STEL: 3 ppm STEL: 18 mg/m³	-	TWA: 1 ppm TWA: 6.2 mg/m³	-	-

Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	-	-	-	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ H*	-
1-Methoxy-2-propanol 107-98-2	STEL: 150 ppm STEL: 568 mg/m³ TWA: 100 ppm TWA: 375 mg/m³ Peau*	STEL: 150 ppm STEL: 568 mg/m³ skin* TWA: 100 ppm TWA: 375 mg/m³	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 563 mg/m³ H*	TWA: 50 ppm TWA: 180 mg/m³ STEL: 75 ppm STEL: 225 mg/m³ H*	STEL: 360 mg/m³ TWA: 180 mg/m³ skóra*
Tetramethyl orthosilicate 681-84-5	-	-	-	TWA: 1 ppm TWA: 6 mg/m³ STEL: 3 ppm STEL: 12 mg/m³	-

Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³	TWA: 0.05 mg/m³ STEL: 0.15 mg/m³	TWA: 0.1 mg/m³ K* Ceiling: 0.2 mg/m³	TWA: 0.009 mg/m³ TWA: 0.0018 ppm STEL: 0.0018 ppm STEL: 0.009 mg/m³	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³ vía dérmica*
1-Methoxy-2-propanol 107-98-2	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 568 mg/m³	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 568 mg/m³ P*	TWA: 100 ppm TWA: 375 mg/m³ K* Ceiling: 568 mg/m³	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 568 mg/m³ K*	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 568 mg/m³ vía dérmica*
Tetramethyl orthosilicate 681-84-5	TWA: 1 ppm	-	-	TWA: 2 mg/m³ TWA: 0.3 ppm STEL: 0.3 ppm STEL: 2 mg/m³	TWA: 1 ppm TWA: 6.3 mg/m³

Chemical name	Sweden	Switzerland	United Kingdom
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] 41484-35-9	-	TWA: 3 mg/m³ STEL: 6 mg/m³	-
Dimethylbis[(1-oxoneodecyl)oxy]stannane 68928-76-7	NGV: 0.1 mg/m³ H*	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³ H*	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³ Sk*
1-Methoxy-2-propanol 107-98-2	Bindande KGV: 150 ppm Bindande KGV: 568 mg/m³ NGV: 50 ppm NGV: 190 mg/m³ H*	TWA: 100 ppm TWA: 360 mg/m³ STEL: 200 ppm STEL: 720 mg/m³	TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 560 mg/m³ Sk*
Tetramethyl orthosilicate 681-84-5	-	TWA: 1 ppm TWA: 6 mg/m³	-

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	15 mg/L (urine - 1-Methoxypropan-2-ol end of shift)

				of exposure or end of shift) urine	

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 No information available

Chemical name	Oral	Dermal	Inhalation
Propylidynetrimethanol, propoxylated 25723-16-4	-	13.9 mg/kg bw/day [4] [6]	98 mg/m³ [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/m³ [4] [6]
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/m³ [4] [6]
1-Methoxy-2-propanol 107-98-2	-	183 mg/kg bw/day [4] [6]	369 mg/m³ [4] [6] 553.5 mg/m³ [4] [7] 553.5 mg/m³ [5] [7]
neodecanoic acid 26896-20-8	-	29 mg/kg bw/day [4] [6]	86 mg/m³ [4] [6]
Tetramethyl orthosilicate 681-84-5	-	0.3 mg/kg bw/day [4] [6] 0.3 mg/kg bw/day [4] [7]	93 mg/m³ [5] [6]

Derived No Effect Level (DNEL) - General Public No information available.

Chemical name	Oral	Dermal	Inhalation
Propylidynetrimethanol, propoxylated 25723-16-4	8.3 mg/kg bw/day [4] [6]	-	29 mg/m³ [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/m³ [4] [6]
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] 41484-35-9	0.69 mg/kg bw/day [4] [6]	-	-
1-Methoxy-2-propanol 107-98-2	33 mg/kg bw/day [4] [6]	-	43.9 mg/m³ [4] [6]
neodecanoic acid 26896-20-8	17.5 mg/kg bw/day [4] [6]	-	25.79 mg/m³ [4] [6]

Predicted No Effect Concentration (PNEC) No information available.

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Propylidynetrimethanol, propoxylated 25723-16-4	0.2 mg/L	1 mg/L	0.02 mg/L	-	-
trimethoxyvinylsilane 2768-02-7	0.4 mg/L	2.4 mg/L	0.04 mg/L	-	-
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	-	-
1-Methoxy-2-propanol 107-98-2	10 mg/L	100 mg/L	1 mg/L	-	-
neodecanoic acid 26896-20-8	0.11 mg/L	-	0.011 mg/L	-	-
Tetramethyl orthosilicate 681-84-5	5 mg/L	50 mg/L	0.5 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Propylidynetrimethanol, propoxylated 25723-16-4	0.52 mg/kg sediment dw	0.052 mg/kg sediment dw	1000 mg/L	0.066444 mg/kg soil dw	-
trimethoxyvinylsilane 2768-02-7	1.5 mg/kg sediment dw	0.15 mg/kg sediment dw	6.6 mg/L	0.06 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	-
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	-
neodecanoic acid 26896-20-8	-	-	-	-	0.0167 g/kg food
Tetramethyl orthosilicate 681-84-5	20 mg/kg sediment dw	2 mg/kg sediment dw	1 mg/L	1.12 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection	Wear suitable gloves.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Viscous
Colour	Colourless
Odour	Characteristic.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
Melting point / freezing point	< 0 °C	None known
Initial boiling point and boiling range	No data available	None known
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	No data available	None known
Autoignition temperature	No data available	None known
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	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapour pressure	No data available	None known
Relative density	1.033 @ 20°C/68°F	None known
Bulk density	No data available	
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 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. Harmful if swallowed. (based on components).

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)	512.30 mg/kg
ATEmix (dermal)	2,429.50 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
Propane-1,2-diol, propoxylated	= 3750 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
trimethoxyvinylsilane	= 7340 µL/kg (Rat)	= 3.54 mL/kg (Rabbit)	= 16.8 mg/L (Rat) 4 h
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxy phenyl)propionate]	= 6300 mg/kg (Rat)	-	-
1-Methoxy-2-propanol	= 5000 mg/kg (Rat)	= 13 g/kg (Rabbit)	> 7559 ppm (Rat) 6 h
Tetramethyl orthosilicate	-	= 17 g/kg (Rabbit)	= 392.17 mg/m³ (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 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 with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
trimethoxyvinylsilane	-	LC50: =191mg/L (96h, Oncorhynchus mykiss)	-	-
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	-	LC50: >57mg/L (96h, Danio rerio)	-	-
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
Propane-1,2-diol, propoxylated	1.13
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
Propane-1,2-diol, propoxylated	The substance is not PBT / vPvB
trimethoxyvinylsilane	The substance is not PBT / vPvB
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
Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	The substance is not PBT / vPvB
1-Methoxy-2-propanol	The substance is not PBT / vPvB
Tetramethyl orthosilicate	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
1-Methoxy-2-propanol - 107-98-2	RG 84

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
trimethoxyvinylsilane - 2768-02-7	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
H226 - Flammable liquid and vapour
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness
H361 - Suspected of damaging fertility or the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure
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 20/07/2023

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

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Safety data sheet according to Regulation (EC) 2020/878

Revision date 20/07/2023 **Revision Number** 1.34

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

1.1. Product identifier

Product Name RS Pro Optically Clear Polyurethane Resin, Part B

Product Code(s) 146-6593, ZP

Safety data sheet number 02080

Unique Formula Identifier (UFI) GJ1D-20TK-T006-J3QW

Pure substance/mixture Mixture

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

Recommended use Hardener

Uses advised against No specific uses advised against are identified

1.3. Details of the supplier of the safety data sheet

Supplier

RS Components Ltd
Birchington Road
Corby
Northants
NN17 9RS
+44 (0) 845 850 9900
RCustomerServicesUK@rs-components.com

RS Components Ltd
Glenview Industrial Estate
Herberton Road
Rialto
Dublin 12
+353 (0) 1 415 3100
enquiries.ie@rs-components.com

For further information, please contact

E-mail address RCustomerServicesUK@rs-components.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 -

+44 1235 239670 (24hr)

+44 (0) 1865 407333 (24hr)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute toxicity - Inhalation (Gases)	Category 4 - (H332)
Acute toxicity - Inhalation (Vapours)	Category 4 - (H332)
Acute toxicity - Inhalation (Dusts/Mists)	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.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 diisocyanate, oligomers 28182-81-2	60-100	01-2119485796-17-0002	500-060-2	Acute Tox. 4 (H332) Skin Sens. 1 (H317) STOT SE 3 (H335)	-	-	-
hexamethylene-di-isocyanate 822-06-0	<0.1	01-2119457571-37-0001	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
No information available

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 >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation 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.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.

Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention.

Self-protection of the first aider	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

Symptoms	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/m³ STEL 0.005 ppm STEL 0.035 mg/m³ Ceiling: 0.005 ppm Ceiling: 0.035 mg/m³ Sa+ Sh+	TWA: 0.005 ppm TWA: 0.034 mg/m³	TWA: 0.1 mg/m³	TWA: 0.02 mg/m³ STEL: 0.07 mg/m³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
hexamethylene-di-isocyanate 822-06-0	-	TWA: 0.035 mg/m³ Ceiling: 0.07 mg/m³ S+	TWA: 0.005 ppm TWA: 0.035 mg/m³ STEL: 0.01 ppm STEL: 0.07 mg/m³	S+ TWA: 0.005 ppm TWA: 0.03 mg/m³ STEL: 0.01 ppm STEL: 0.07 mg/m³	STEL: 0.035 mg/m³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Hexamethylene diisocyanate, oligomers 28182-81-2	STEL: 1 mg/m³	-	-	-	-

hexamethylene-di-isocyanate 822-06-0	TWA: 0.01 ppm TWA: 0.075 mg/m³ STEL: 0.02 ppm STEL: 0.15 mg/m³ AR+	Sa+ TWA: 0.005 ppm TWA: 0.035 mg/m³	TWA: 0.005 ppm TWA: 0.035 mg/m³ Peak: 0.005 ppm Peak: 0.035 mg/m³ respiratory and skin sensitizer	TWA: 0.01 ppm TWA: 0.075 mg/m³ STEL: 0.02 ppm STEL: 0.15 mg/m³	sz+ TWA: 0.035 mg/m³ STEL: 0.035 mg/m³

Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
hexamethylene-di-isocyanate 822-06-0	TWA: 0.005 mg/m³ STEL: 0.015 mg/m³ Sens+	-	TWA: 0.005 ppm TWA: 0.034 mg/m³	TWA: 0.05 mg/m³	Ceiling: 0.01 ppm Ceiling: 0.07 mg/m³ J+ TWA: 0.005 ppm TWA: 0.03 mg/m³

Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
hexamethylene-di-isocyanate 822-06-0	-	-	-	TWA: 0.005 ppm TWA: 0.035 mg/m³ A+ STEL: 0.01 ppm	STEL: 0.08 mg/m³ TWA: 0.04 mg/m³ 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/m³ STEL: 0.14 ppm STEL: 1 mg/m³	TWA: 0.005 ppm TWA: 0.035 mg/m³ S+	TWA: 0.005 ppm TWA: 0.035 mg/m³ STEL: 0.005 ppm STEL: 0.035 mg/m³	TWA: 0.005 ppm TWA: 0.035 mg/m³ Sen+

Chemical name	Sweden	Switzerland	United Kingdom
hexamethylene-di-isocyanate 822-06-0	Bindande KGV: 0.005 ppm Bindande KGV: 0.03 mg/m³ S+ NGV: 0.002 ppm NGV: 0.02 mg/m³	S+ TWA: 0.02 mg/m³ STEL: 0.02 mg/m³	TWA: 0.02 mg/m³ STEL: 0.07 mg/m³ 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 - Hexamethylenediamine after hydrolysis end of shift)	1 mmol isocyanate-derived diamine/mol creatinine - urine () - end of the period of exposure

Derived No Effect Level (DNEL) - Workers No information available

Chemical name	Oral	Dermal	Inhalation
hexamethylene-di-isocyanate 822-06-0	-	-	0.035 mg/m³ [5] [6] 0.07 mg/m³ [5] [7]

Derived No Effect Level (DNEL) - General Public No information available.

Predicted No Effect Concentration (PNEC) No information available.

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

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

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

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Liquid

Appearance	Liquid
Colour	Colourless light yellow
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
Melting point / freezing point	< -20 °C	None known
Initial boiling point and boiling range	> 150 °C	@ 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	> 160 °C	None known
Autoignition temperature	No data available	None known
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	600 mPa s @ 25°C/77°F	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	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	1.13 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/m³ (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 20/07/2023

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Disclaimer
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End of Safety Data Sheet