SAFETY DATA SHEET

Version: 24-July-2019 Revision date: 24-July-2019
ACCORDING TO OSHA HCS (29 CFR 1910.1200)

S1184 Adhesive - Part B

SECTION 1: IDENTIFICATION

Product identifier

Product Name	S1184 Adhesive – Part B

Other Means of Identification

	None
Product type	Mixture

Recommended use and restrictions

Identified Use(s)	Adhesive. Epoxy Resin. Hardener
Uses Advised Against	None known.

Details of the supplier of the safety data sheet

Address of Supplier	Tyco Electronics UK Ltd Faraday Road, Dorcan, Swindon, Wiltshire, SN3 5HH, United Kingdom
Telephone	+44 (0) 1793 52 81 71 (Head Office) Monday - Friday 08:00 - 17:00 (GMT)
Fax	+44 1793 57 2516
E-Mail (competent person)	msdsmaterialsuk@te.com

Emergency telephone number

Emergency Phone No.	+44 1793 528171	GMT (Monday to Friday 08:00 - 17:00)
Languages spoken	English	

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200

Physical hazards	Flammable Liquid, Category 4
Health hazards	Acute toxicity, Category 4 - Oral Skin corrosion/irritation, Category 1 Skin Sensitisation, Category 1 Eye damage, category 1 Specific target organ toxicity — repeated exposure, Category 2

Label elements

Product Name	S1184 Adhesive – Part B
Contains:	3,6,9,12-tetraazatetradecamethylenediamine; Triethylenetetramine; Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine; Fatty acids, soya, reaction products with polyethylenepolyamines, Xylene
Hazard Symbol	
Optional Hazard Symbol	
Signal Word(s)	DANGER
Hazard Statement(s)	Combustible liquid. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

Precautionary Statement(s)	May cause damage to organs through prolonged or repeated exposure. Wash hands and exposed skin thoroughly after handling. Do not breathe mist/vapours/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Get medical advice/attention if you feel unwell. Take off contaminated clothing and wash it before reuse. Disposal should be in accordance with local, state or national legislation.
Other hazards Environmental hazards	Hazardous to the aquatic environment, Acute, Category 1. Hazardous to the aquatic environment, Chronic , Category 1; Toxic to aquatic life with long lasting effects. Avoid release to the environment.
Percent of the mixture consists of ingredient(s) of unknown acute toxicity:	0% of the mixture consists of ingredients of unknown acute oral toxicity. 0% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Not applicable
Mixtures Substances in preparations / mixtures.

Chemical Name	CAS No.	Concentration (%W/W)	Common name(s), synonym(s) of the substance	Hazard classification
Silver	7440-22-4	<70	Ag Granalien, Fine silver, Silver bullion, Silver granules	Skin corrosion/irritation, Category 2 Skin Sensitisation, Category 1 Eye Irritation, Category 2
Fatty acids, soya, reaction products with polyethylenepolyamines	91051-56-8	<25	-	Acute toxicity, Category 4 - Oral Skin corrosion/irritation, Category 2 Skin Sensitisation, Category 1 Eye Irritation, Category 2
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	68082-29-1	<10	C18 unsaturated fatty acid dimer polymer with TOFA and TETA; FATTY ACID-POLYETHYLAMINE POLYMER	Skin corrosion/irritation, Category 2 Eye damage, category 1 Skin Sensitisation, Category 1A
3,6,9,12-tetraazatetradecamethylenediamine	4067-16-7	<10	3,6,9,12-tetra-azatetradecamethylenediamine; N,N'-bis[2-(2-aminoethylamino)ethyl]ethane-1,2-diamine	Acute toxicity, Category 4 - Oral Acute toxicity, Category 4 - Dermal Skin corrosion/irritation, Category 1A Eye damage, category 1 Skin Sensitisation, Category 1
Triethylenetetramine	112-24-3	<5	3,6-diazaoctanethylenediamin; Trientine; 1,2 Ethanediamine, N,N'-Bis(2-aminoethyl)-	Acute toxicity, Category 4 - Dermal Skin corrosion/irritation, Category 1B Skin Sensitisation, Category 1

Xylene	1330-20-7	<2	1,2 dimethylbenzene; 1,2-dimethylbenzene, 1,3-dimethylbenzene, 1,4-dimethylbenzene; Dimethylbenzene	Flammable Liquid, Category 3 Acute toxicity, Category 4 - Dermal Acute toxicity, Category 4 - Inhalation Skin corrosion/irritation, Category 2 Eye Irritation, Category 2 Aspiration hazard, Category 1 Specific target organ toxicity — single exposure, Category 3 (Respiratory Tract) Specific target organ toxicity — repeated exposure, Category 2

Notes: For full text of H phrases see section 16.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Self-protection of the first aider	No action should be taken involving personal risk. Wear appropriate personal protective equipment, avoid direct contact. Remove contaminated clothing immediately. If unconscious, place in recovery position and get medical attention immediately. Apply artificial respiration if necessary. Check the vital functions. Keep cool.
Inhalation	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/attention.
Skin Contact	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Obtain immediate medical attention.
Eye Contact	IF IN EYES: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Treatment by an ophthalmologist due to possible caustic burn of the eyes may be required.
Ingestion	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Obtain immediate medical attention.
Most important symptoms and effects, both acute and delayed	Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause damage to organs through prolonged or repeated exposure.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically. No antidotes known.
Notes to a physician:	IF IN EYES: Treatment by an ophthalmologist due to possible caustic burn of the eyes may be required.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing media	Combustible Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions. Water spray, foam, dry powder or CO2.
Unsuitable extinguishing media	Do not use water jet. Direct water jet may spread the fire.
Special hazards arising from the substance or mixture	May give off noxious and toxic fumes in a fire. Combustion products: Carbon monoxide, Carbon dioxide, Nitrogen oxides
Special protective equipment and precautions for fire fighters	Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Chemical protection suit. Keep containers cool by spraying with water if exposed to fire. Evacuate if necessary. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

No action should be taken involving personal risk. Wear appropriate personal protective equipment, avoid direct contact. Remove contaminated clothing and wash all affected areas with plenty of water.

Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into soil must be alerted to the appropriate regulatory body.

Methods and material for containment and cleaning up

Contain spillages. Cover spills with inert absorbent material. Recover the product where possible. Ventilate the area and wash spill site after material pick-up is complete.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

When using do not eat or drink. Provide adequate ventilation when using the material and follow the principles of good occupational hygiene to control personal exposures. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not eat, drink or smoke when using this product. Avoid all contact. Remove contaminated clothing and wash clothing before reuse.

Conditions for safe storage, including any incompatibilities

Keep only in original packaging. Keep in a well ventilated place. Keep container closed.

Storage temperature

Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources.

Storage life

Stable at ambient temperatures.

Incompatible materials

Keep away from oxidising substances. Avoid contact with acids and alkalis.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

Substance	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note	Source
Silver, metal and soluble compounds (as Ag)	7440-22-4	-	0.01	-	-	-	OSHA (Z-1) NIOSH
		-	0.1	-	-	-	ACGIH
Xylenes (o-, m-, p-isomers)	1330-20-7	100	435	-	-	-	OSHA (Z-1)
		100	435	150	655	-	NIOSH
		100	-	150	-	A4	ACGIH
Ethylbenzene	100-41-4	100	435	-	-	-	OSHA (Z-1)
		100	435	125	545	-	NIOSH
		20	-	-	-	A3	ACGIH
Toluene	108-88-3	100	375	150	560	-	NIOSH
		200	-	-	-	A4	ACGIH

Source:
OSHA Permissible Exposure Limit (PEL): Occupational Safety and Health Standards, 1910.1000 TABLE Z-1
NIOSH: National Institute for Occupational Safety and Health (NIOSH) Recommended exposure limits (RELs)
ACGIH: American Conference of Governmental Industrial Hygienists - Threshold limit values (TLV) 2017

Note:
A3: Confirmed animal carcinogen with unknown relevance to humans.
A4: Not Classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of the lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.

Substance	CAS No.	LTEL (8 hr TWA ppm)	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	
				Concentration	Maximum duration
Toluene	108-88-3	200	300ppm	500ppm	10 minutes

Source:
OSHA Permissible Exposure Limit (PEL): Occupational Safety and Health Standards, 1910.1000 TABLE Z-2

Biological limit value

SUBSTANCE	CAS No.	Determinant	Biological Exposure Indices	Sampling Time	Note
Xylenes (o-, m-, p-isomers)	1330-20-7	Methylhippuric acids in urine.	1.5 g/g Creatinine	End of shift	-
Ethylbenzene	100-41-4	Sum of mandelic acid and phenylglyoxylic acid in urine	0.15 g/g Creatinine	End of shift	Ns
Toluene	108-88-3	Toluene in blood Toluene in urine o-Cresol in urine with hydrolosis	0.02 mg/l 0.03 mg/l 0.3 mg/g creatinine	Prior to last shift of workweek End of shift End of shift	- - B

Source: ACGIH: American Conference of Governmental Industrial Hygienists - Biological Exposure Index (BEI) 2017

Note:
B: Background
Ns: Nonspecific

The other components listed in Section 3 do not have occupational exposure limits

Exposure controls

Appropriate engineering controls

Provide adequate ventilation when using the material and follow the principles of good occupational hygiene to control personal exposures. Take action to prevent static discharges. Keep away from fire, sparks and heated surfaces.

Personal protection equipment

Use personal protective equipment as required. Take care for general good hygiene and housekeeping. Avoid all contact. Avoid inhalation of vapours that may be evolved at elevated temperatures.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Eye/ face protection

Wear eye protection with side protection (EN166). Eyewash bottles should be available.

Skin protection (Hand protection/ Other)

Hand protection
Wear impervious gloves (EN374).

Body protection Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Recommended: A self contained breathing apparatus may be appropriate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Silver / Grey,Viscous
Odour	Ammonia odour.
Odour threshold	Not available

pH	Not determined
Melting point/freezing point	Not determined
Initial boiling point and boiling range	> 150 °C
Flash point	122 °C [Closed cup]
Evaporation rate	Not determined
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not determined
Vapour density	> 2
Relative density	2.0
Solubility(ies)	Water: Insoluble
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature	315 °C
Decomposition Temperature	Not determined
Viscosity (mPa. s)	Not determined

Other information

Explosive properties	Not explosive
Oxidising properties	Not oxidising

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation will not occur. Can polymerise exothermically if in contact with acids.
Conditions to avoid	Avoid prolonged storage at elevated temperature.
Incompatible materials	Keep away from oxidising substances. Avoid contact with acids and alkalis.
Hazardous decomposition product(s)	Combustion products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity - Oral	Mixture: Acute Tox. 4; Harmful if swallowed.
	Calculated acute toxicity estimate (ATE) <2,000 mg/kg.
Fatty acids, soya, reaction products with polyethylenepolyamines	Acute Tox. 4; Harmful if swallowed.
	No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified
	LD50 (oral,rat) mg/kg: >2000 (OECD 423)
3,6,9,12-tetraazatetradecamethylenediamine	Acute Tox. 4; Harmful if swallowed.
	LD50 (oral,rat) mg/kg: 1716 (OECD 401)
Triethylenetetramine	Acute Tox. 4: Harmful if swallowed. Harmonised Classification
	No data
Xylene	Not classified - LD50 > 2 000 mg/kg bw/day (rat) EU Method B.1
Acute toxicity - Dermal	Mixture: Based upon the available data, the classification criteria are not met.
	Calculated acute toxicity estimate (ATE) >2,000 mg/kg.
Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified
	No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified
	LD50 > 2000 mg/kg bw/day (rat) OECD 402
3,6,9,12-tetraazatetradecamethylenediamine	Acute Tox. 4; Harmful in contact with skin.
	LD50 (skin,rabbit) mg/kg: 1465 (OECD 402)
Triethylenetetramine	Acute Tox. 4: Harmful in contact with skin. Harmonised Classification
	No data
Xylene	Acute Tox. 4; Harmful in contact with skin. Harmonised Classification
Acute toxicity - Inhalation	Mixture: Based upon the available data, the classification criteria are not met.
	Calculated acute toxicity estimate (ATE) > 5 mg/l
Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified
	No data

Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified No data
3,6,9,12-tetraazatetradecamethylenediamine	Not classified No data
Triethylenetetramine	Not classified No data
Xylene	Acute Tox. 4; Harmful if inhaled. Harmonised Classification
Skin corrosion/irritation	Mixture: Skin Corr. 1; Causes severe skin burns and eye damage.
Fatty acids, soya, reaction products with polyethylenepolyamines	Skin Irrit. 2; Causes skin irritation. No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Skin Irrit. 2; Causes skin irritation. Irritating to skin. (in vitro) (OECD 439)
3,6,9,12-tetraazatetradecamethylenediamine	Skin Corr. 1A; Causes severe skin burns and eye damage. Harmonised Classification Corrosive to skin. (rabbit) (OECD 404)
Triethylenetetramine	Skin Corr. 1; Causes severe skin burns and eye damage. Harmonised Classification No data
Xylene	Skin Irrit. 2; Causes skin irritation. Harmonised Classification ECHA Registration Endpoint summary: Irritating to eyes, respiratory system and skin.
Serious eye damage/irritation	Mixture: Eye Dam. 1; Causes serious eye damage.
Fatty acids, soya, reaction products with polyethylenepolyamines	Eye Dam . 1; Causes serious eye damage. No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Eye Dam. 1; Causes serious eye damage. Severely irritating to eyes. (rabbit) (OECD 405)
3,6,9,12-tetraazatetradecamethylenediamine	Eye Dam. 1; Causes serious eye damage. Corrosive to eyes. (rabbit) (OECD 405)
Triethylenetetramine	Skin Corr. 1; Causes severe skin burns and eye damage. Harmonised Classification No data
Xylene	Eye Irrit. 2; Causes eye irritation. ECHA Registration Endpoint summary: Irritating to eyes, respiratory system and skin.
Respiratory or skin sensitization	Mixture: Skin Sens. 1; May cause an allergic skin reaction.
Fatty acids, soya, reaction products with polyethylenepolyamines	Skin Sens. 1; May cause an allergic skin reaction. No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Skin Sens. 1; May cause an allergic skin reaction. Sensitisation (mouse): Positive (OECD 429)
3,6,9,12-tetraazatetradecamethylenediamine	Skin Sens. 1; May cause an allergic skin reaction. Harmonised Classification Sensitisation (guinea pig) - Positive (OECD 406)
Triethylenetetramine	Skin Sens. 1; May cause an allergic skin reaction. Harmonised Classification No data
Xylene	Not classified - ECHA Registration Endpoint summary: Negative
Germ cell mutagenicity	Mixture: Based upon the available data, the classification criteria are not met.
Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified In vitro: Negative (OECD 487) In vivo: No data
3,6,9,12-tetraazatetradecamethylenediamine	Not classified In vitro: Negative (OECD 482) In vivo: Negative (mouse) (OECD 474)
Triethylenetetramine	Not classified In vitro: No data In vivo: No data
Xylene	Not classified - In vitro: Negative (Chinese hamster Ovary) EU Method B.10 In vivo: Negative (mouse) OECD 478
Carcinogenicity	Mixture: Based upon the available data, the classification criteria are not met.

Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified No data
3,6,9,12-tetraazatetradecamethylenediamine	Not classified No evidence of carcinogenic effects. (mouse) (OECD 451)
Triethylenetetramine	Not classified No data
Xylene	No specific effects and/or symptoms have been reported or known. Not classified - Negative (rat) EU Method B.32
Reproductive toxicity	Mixture: Based upon the available data, the classification criteria are not met.
Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified Reproductive toxicity: NOAEL (rat) mg/kg bw/day 1000. No effects observed (OECD 422) Developmental Toxicity: No data
3,6,9,12-tetraazatetradecamethylenediamine	Not classified Reproductive toxicity: No data Developmental Toxicity: No data
Triethylenetetramine	Not classified Reproductive toxicity: No effects observed (rat) (OECD 422) Developmental Toxicity: No data
Xylene	Not classified - ECHA Registration Endpoint summary: Not classified for reproductive or developmental toxicity.
STOT - single exposure	Mixture: Based upon the available data, the classification criteria are not met.
Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified No data
3,6,9,12-tetraazatetradecamethylenediamine	Not classified No data
Triethylenetetramine	Not classified No data
Xylene	STOT SE 3; May cause respiratory irritation. ECHA Registration Endpoint summary: Irritating to eyes, respiratory system and skin.
STOT - repeated exposure	Mixture: STOT RE 2; May cause damage to organs through prolonged or repeated exposure.
Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified Oral: NOAEL (rat) mg/kg bw/day 1000 (OECD 422) Inhalation: No data Dermal: No data
3,6,9,12-tetraazatetradecamethylenediamine	Not classified Oral: NOAEL (rat) mg/kg bw/day 50 (OECD 422) Inhalation: No data Dermal: No data
Triethylenetetramine	Not classified Oral: No data Inhalation: No data Dermal: No data
Xylene	STOT RE 2; May cause damage to organs through prolonged or repeated exposure. Oral: Adverse effects observed – NOAEL (rat) 250 mg/kg bw/day Inhalation: Adverse effects observed – NOAEC (rat) 3515 mg/m³ Dermal: Not classified - No data
Aspiration hazard	Mixture: Based upon the available data, the classification criteria are not met.

Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified - Not applicable
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified - Not applicable
3,6,9,12-tetraazatetradecamethylenediamine	Not classified - Not applicable
Triethylenetetramine	Not classified - Not applicable
Xylene	Asp. Tox. 1; May be fatal if swallowed and enters airways. Hydrocarbon

Information on likely routes of exposure

Inhalation	Unlikely – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure

Early onset symptoms related to exposure Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Delayed health effects from exposure Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure.

Other information

NTP Report on Carcinogens	All chemicals are not listed
IARC Monographs	Xylene: Group 3
OSHA Designated Carcinogen	All chemicals are not listed
NIOSH Occupational Carcinogen List	All chemicals are not listed

SECTION 12: ECOLOGICAL INFORMATION

Toxicity	Mixture: Aquatic Acute 1; Very toxic to aquatic life. Aquatic Chronic 1; Very toxic to aquatic life with long lasting effects.
Silver	Aquatic Acute 1; Very toxic to aquatic life. Short term: LC50 (fish) mg/l 0.12 (Bielmyer GK et al, 2007) Aquatic Chronic 1; Very toxic to aquatic life with long lasting effects. Long Term: NOEC (Fish) mg/l 0.13 (Ward TJ et al, 2006)
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids	Aquatic Chronic 2; Acute Toxicity: LC50 (fish) mg/l 7.07 (96 hour) (OECD 203) Chronic Toxicity: No data
3,6,9,12-tetraazatetradecamethylenediamine	Aquatic Acute 1; Very toxic to aquatic life. Short term: LC50 (fish) mg/l 0.18 (EU Method C.1) Aquatic Chronic 1; Very toxic to aquatic life with long lasting effects. Long Term: No data
Triethylenetetramine	Aquatic Chronic 3; Harmonised Classification Acute Toxicity: No data Chronic Toxicity: No data
Xylene	Aquatic Chronic 3; Harmful to aquatic life with long lasting effects. EU Harmonised Classification Short term: Not classified - LC50 (fish) mg/l 2.6 OECD 203 Long Term: NOEC (Fish) mg/l >1.3 (Walsh et al, 1977)
Persistence and degradability	The product is likely to persist in the environment.
Silver	Not applicable for inorganic substances
Fatty acids, soya, reaction products with polyethylenepolyamines	No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Inherently biodegradable, not fulfilling criteria. ECHA registration dossier
3,6,9,12-tetraazatetradecamethylenediamine	Not readily biodegradable (according to OECD criteria). ECHA registration dossier
Triethylenetetramine	No data.
Xylene	Readily biodegradable. (10 Days) OECD 301 F
Bioaccumulative potential	The product has low potential for bioaccumulation.

Silver	BCF = 70 - The substance has low potential for bioaccumulation. ECHA registration dossier
Fatty acids, soya, reaction products with polyethylenepolyamines	No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Bioconcentration factor (BCF) : 77.4 The substance has high potential for bioaccumulation. ECHA registration dossier
3,6,9,12-tetraazatetradecamethylenediamine	No data.
Triethylenetetramine	No data.
Xylene	The substance has low potential for bioaccumulation. ECHA registration dossier
Mobility in soil	The product is predicted to have low mobility in soil.
Silver	The substance is predicted to have low mobility in soil. ECHA registration dossier
Fatty acids, soya, reaction products with polyethylenepolyamines	No data
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	No data.
3,6,9,12-tetraazatetradecamethylenediamine	The substance is predicted to have moderate mobility in soil. ECHA registration dossier
Triethylenetetramine	No data.
Xylene	The substance is predicted to have moderate mobility in soil. ECHA registration dossier
Results of PBT and vPvB assessment	No data for the mixture as a whole. None of the substances in this product fulfil the criteria for being regarded as a PBT or vPvB substance.
Silver	Not classified as PBT or vPvB. ECHA registration dossier
Fatty acids, soya, reaction products with polyethylenepolyamines	Not classified as PBT or vPvB.
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Not classified as PBT or vPvB. ECHA registration dossier
3,6,9,12-tetraazatetradecamethylenediamine	Not classified as PBT or vPvB. ECHA registration dossier
Triethylenetetramine	Not classified as PBT or vPvB.
Xylene	Not classified as PBT or vPvB. ECHA registration dossier
Other adverse effects	Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014).

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Dispose of wastes in an approved waste disposal facility. Recover or recycle if possible.
Waste code(s) / waste designation(s)	08 04 09 Packaging waste: 15 01 10
Additional Information	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

SECTION 14: TRANSPORT INFORMATION

	Road/Rail (ADR/RID)	**Sea transport (IMDG)**	**Air (ICAO/IATA)**
UN number	UN1760	UN1760	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (3,6,9,12-tetraazatetradecamethylenediamine; Triethylenetetramine)	CORROSIVE LIQUID, N.O.S. (3,6,9,12-tetraazatetradecamethylenediamine; Triethylenetetramine)	CORROSIVE LIQUID, N.O.S. (3,6,9,12-tetraazatetradecamethylenediamine; Triethylenetetramine)
Transport hazard class(es)	8	8	8
Hazard Identification Number	80	Not applicable	Not applicable
Classification code:	C10	Not applicable	Not applicable
Packing group	III	III	III
Environmental hazards	Environmentally hazardous substance	Classified as a Marine Pollutant.	Environmentally hazardous substance

Special precautions for user			
Special Provisions	274	274	A3
Limited Quantities	5L	5L	5kg (Y844)
Excepted Quantities	E1	E1	-
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable		
Additional Information	None known		

SECTION 15: REGULATORY INFORMATION

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

US Federal Regulations

TSCA Inventory	Xylene
TSCA Inventory Notification (Active-Inactive) Rule	Silver: active substance; exempt list of active substances Xylene: active substance; exempt list of active substances
TSCA Chemical Data Reporting (CDR) Rule	Silver: subject to 25,000 lb reporting threshold Xylene: subject to 25,000 lb reporting threshold

US State Regulations

Poison Prevention Packaging Act	Xylene: Substance requiring special packaging - Solvents for paint or other similar surface-coating material
Proposition 65 (California)	All chemicals are not listed
California State, Safer Consumer Products Regulations	Silver: Candidate Chemicals List Xylene: Initial Candidate Chemicals List
California State, Hazardous Substances Information and Training Act	Silver: Hazardous Substances List - MSDS must be provided under specific circumstances Xylene: Hazardous Substances List

EU regulations

Wassergefährdungsklasse (Germany)	Water hazard class: 3 (Self classification)
Volatile Organic Compound Content (%):	2.61%

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements:
SECTION 11: Acute toxicity - Oral, Serious eye damage/irritation.

Version: 24-July-2019 Date of preparation: 24-July-2019 Date Previous Issue: 22-August-2018

References:
Existing Safety Data Sheet (SDS). Existing ECHA registration(s) for Silver (CAS No. 7440-22-4); 4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer (CAS No. 25068-38-6); Xylene (CAS No. 1330-20-7); Ethylbenzene (CAS No. 100-41-4); Toluene (CAS No. 108-88-3). EU Harmonised Classification(s) for Silver (CAS No. 7440-22-4); 4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer (CAS No. 25068-38-6); Xylene (CAS No. 1330-20-7); Ethylbenzene (CAS No. 100-41-4); Toluene (CAS No. 108-88-3)

Literature References:

1. Bielmyer GK, Grosell M, Paquin PR, Mathews R, Wu KB, Santore RC, Brix KV., 2007, Validation study of the acute biotic ligand model for silver, Environmental Toxicology and Chemistry. 26: 2241-2246
2. Ward TJ, Boeri RL, Hogstrand C, Kramer JR, Lussier SM, Stubblefield WA, Wyskiel DC, Gorsuch JW, 2006, Influence of salinity and organic carbon on the chronic toxicity of silver to mysids (Americamysis bahia) and silversides (Menidia beryllina), Environmental Toxicology and Chemistry. 25: 1809-1816
3. Walsh, Armstrong, Bartley, Salman and Frank, 1977, Residues of emulsfied xylene in aquatic weed control and their impact on rainbow trout, Appl. Sci. Branch, Eng. Res. Cent. Denver, CO: 15p.

Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 4	Flash Point (°C)

Acute toxicity, Category 4 - Oral	Acute Toxicity Estimate Mixture Calculation
Skin corrosion/irritation, Category 1	Threshold Calculation
Skin Sensitisation, Category 1	Threshold Calculation
Eye damage, category 1	Threshold Calculation
Specific target organ toxicity — repeated exposure, Category 2	Threshold Calculation
Hazardous to the aquatic environment, Acute, Category 1	Summation Calculation
Hazardous to the aquatic environment, Chronic , Category 1	Summation Calculation

LEGEND

ADR/RID	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road / RID: Regulations concerning the international railway transport of dangerous goods
BCF	Bioconcentration factor (BCF)
CAS	CAS: Chemical Abstracts Service
DNEL	Derived No Effect Level
EC	EC: European Community
EU	European Union
IATA	IATA: International Air Transport Association
ICAO/IATA	ICAO: International Civil Aviation Organization / IATA: International Air Transport Association
IMDG	IMDG: International Maritime Dangerous Goods
LTEL	Long Term Exposure Limit
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
PBT	PBT: Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
STEL	Short Term Exposure Limit
UN	United Nations
vPvB	vPvT: very Persistent and very Toxic

Hazard classification / Classification code:	**Hazard Statement(s)**
Flam. Liq. 2; Flammable Liquid, Category 2	Highly flammable liquid and vapour.
Flam. Liq. 3; Flammable Liquid, Category 3	Flammable liquid and vapour
Acute Tox. 4; Acute toxicity, Category 4	Harmful if swallowed.
Asp. Tox. 1; Aspiration hazard, Category 1	May be fatal if swallowed and enters airways.
Acute Tox. 4; Acute toxicity, Category 4	Harmful in contact with skin.
Skin Corr. 1A ; Skin corrosion/irritation, Category 1A	Causes severe skin burns and eye damage.
Skin Corr. 1B; Skin corrosion/irritation, Category 1B	Causes severe skin burns and eye damage.
Skin Irrit. 2; Skin corrosion/irritation, Category 2	Causes skin irritation.
Skin Sens. 1A; Skin Sensitisation, Category 1A	May cause an allergic skin reaction.
Skin Sens. 1; Skin Sensitisation, Category 1	May cause an allergic skin reaction.
Eye Dam. 1; Eye damage, category 1	Causes serious eye damage.
Eye Irrit. 2; Eye Irritation, Category 2	Causes serious eye irritation.
Acute Tox. 4; Acute toxicity, Category 4	Harmful if inhaled.
STOT SE 3; Specific target organ toxicity — single exposure, Category 3	May cause respiratory irritation. May cause drowsiness or dizziness.
Repr. 2; Reproductive toxicity, Category 2	Suspected of damaging the unborn child.
STOT RE 2; Specific target organ toxicity — repeated exposure, Category 2	May cause damage to organs through prolonged or repeated exposure.
Aquatic Acute 1; Hazardous to the aquatic environment, Acute, Category 1	Very toxic to aquatic life.
Aquatic Chronic 1; Hazardous to the aquatic environment, Chronic , Category 1	Very toxic to aquatic life with long lasting effects.
Aquatic Chronic 2; Hazardous to the aquatic environment, Chronic , Category 2	Toxic to aquatic life with long lasting effects.
Aquatic Chronic 3; Hazardous to the aquatic environment, Chronic , Category 3	Harmful to aquatic life with long lasting effects.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether

a higher level of protection is required.

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