WEST SYSTEM G/flex 650 Resin

Safety Data Sheet

According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law, and based on EU 2020/878
Revision date: 13/11/2023 Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Product name : WEST SYSTEM G/flex 650 Resin
UFI : KC90-G0WS-700X-5TJ2

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

1.2.1. Relevant identified uses

Intended for general public
Main use category : Professional use
Use of the substance/mixture : Resin

1.2.2. Uses advised against

Restrictions on use : No uses have been identified that are advised against

1.3. Details of the supplier of the safety data sheet

Manufacturer
Wessex Resins & Adhesives Limited
Cupernham House Cupernham Lane
SO517LF Romsey – Hampshire
United Kingdom
T + 44 (0) 1794 521111
info@wessex-resins.com - www.wessexresins.co.uk

1.4. Emergency telephone number

Emergency number : + 44 (0) 207 858 1228

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Cardiff Centre) University Hospital Llandough	Penlan Road CF64 2XX	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Edinburgh Centre) Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre	16/17 Framlington Place Newcastle-upon-Tyne NE2 4AB	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA	0344 892 0111	Only for healthcare professionals
United Kingdom	NHS 111/NHS 24/NHS Direct		111 0845 4647	or call a doctor

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP], as amended for UK law

Skin corrosion/irritation, Category 2 H315

Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411

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

Adverse physicochemical, human health and environmental effects

Irritating to eyes and skin. Classified as a skin sensitizer. This product contains hazardous components for the environment.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP], as amended for UK law

Hazard pictograms (CLP) :

GHS07 GHS09

Signal word (CLP) : Warning

Contains : bis-[4-(2,3-epoxipropoxi)phenyl]propane; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

Hazard statements (CLP) : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) : P102 - Keep out of reach of children.
P273 - Avoid release to the environment.
P280 - Wear eye protection, face protection, protective gloves.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Component	
bis-[4-(2,3-epoxipropoxi)phenyl]propane(1675-54-3)	The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Labelling according to Regulation (EC) No 1272/2008 [CLP], as amended for UK law
bis-[4-(2,3-epoxipropoxi)phenyl]propane	CAS-No.: 1675-54-3 EC-No.: 216-823-5 EC Index-No.: 603-073-00-2	≥ 60	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	CAS-No.: 9003-36-5 EC-No.: 701-263-0	≥ 10 – < 30	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411

Specific concentration limits:		
Name	**Product identifier**	**Specific concentration limits**
bis-[4-(2,3-epoxipropoxi)phenyl]propane	CAS-No.: 1675-54-3 EC-No.: 216-823-5 EC Index-No.: 603-073-00-2	(5 ≤ C ≤ 100) Eye Irrit. 2, H319 (5 ≤ C ≤ 100) Skin Irrit. 2, H315

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing difficulties persist : Give oxygen or artificial respiration if necessary.

First-aid measures after skin contact : Wash immediately with plenty of soap and water. Take off immediately all contaminated clothing and wash it before reuse. Sensitisation : contact can cause allergic reactions in humans. Seek medical attention if ill effect develops.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid measures after ingestion : Rinse mouth out with water. Do not induce vomiting. Give nothing or a little water to drink. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation : Inhalation may cause irritation (cough, short breathing, difficulty in breathing).

Symptoms/effects after skin contact : May cause sensitisation by skin contact. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : Irritating to eyes.

Symptoms/effects after ingestion : May cause discomfort. May cause stomach cramps and vomiting.

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

Treat symptomatically. May cause sensitisation of susceptible persons by skin contact.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : If there is a fire close by, use suitable extinguishing agents. Water spray. Dry powder. Foam.

Unsuitable extinguishing media : Use of heavy stream of water may spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	Not flammable. Heating will cause a rise in pressure with a risk of bursting.
Explosion hazard	:	No data available on direct explosion hazard. No data available on indirect explosion hazard.
Hazardous decomposition products in case of fire	:	Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire	:	Evacuate area. Eliminate all ignition sources if safe to do so.
Firefighting instructions	:	Evacuate area. Eliminate all ignition sources if safe to do so. Use water spray or fog for cooling exposed containers.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	:	On exposure to high temperature, may decompose, releasing toxic gases.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Collect spillage. Dispose of contaminated materials in accordance with current regulations.

6.1.1. For non-emergency personnel

Protective equipment	:	Wear recommended personal protective equipment.
Emergency procedures	:	Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Evacuate unnecessary personnel. Keep away from combustible material.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	:	Keep unnecessary and unprotected personnel away from the spillage. Turn leaking containers leak-side up to prevent the escape of liquid. For a large spillage, contain the spillage by bunding. Collect the residue by means of a non-combustible absorbent material. Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up	:	Mechanically recover the product.
Other information	:	Dispose of contaminated materials in accordance with current regulations.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures	:	Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Keep container tightly closed and away from heat, sparks and flame.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Store in a well-ventilated place. Keep cool.
Storage area	:	Store in a well-ventilated place.
Special rules on packaging	:	Store in a closed container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

bis-[4-(2,3-epoxipropoxi)phenyl]propane (1675-54-3)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	0.75 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	4.93 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	0.5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.87 mg/m³
Long-term - systemic effects, dermal	89.3 µg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.006 mg/l
PNEC aqua (marine water)	0.0006 mg/l
PNEC aqua (intermittent, freshwater)	0.018 mg/l
PNEC aqua (intermittent, marine water)	0.0018 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.341 mg/kg dwt
PNEC sediment (marine water)	0.0341 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.0647 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	11 mg/kg food
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (9003-36-5)	
DNEL/DMEL (Workers)	
Acute - local effects, dermal	8.3 µg/cm²
Long-term - systemic effects, dermal	104.15 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	29.39 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	6.25 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	8.7 mg/m³
Long-term - systemic effects, dermal	62.5 mg/kg bodyweight/day

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (9003-36-5)	
PNEC (Water)	
PNEC aqua (freshwater)	0.003 mg/l
PNEC aqua (marine water)	0.0003 mg/l
PNEC aqua (intermittent, freshwater)	0.0254 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.294 mg/kg dwt
PNEC sediment (marine water)	0.0294 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.237 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:
Wear recommended personal protective equipment.

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Chemical goggles or safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Protective gloves

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Disposable gloves, Reusable gloves	Nitrile rubber (NBR)	2 (> 30 minutes)	≥ 0.13		EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. In case of insufficient ventilation, wear suitable respiratory equipment

Respiratory protection			
Device	**Filter type**	**Condition**	**Standard**
Disposable half mask	Type A - High-boiling (>65 °C) organic compounds, Type P3	Protection for Liquid particles, Gas protection	EN 140, EN 14387
Reusable half mask	Type A - High-boiling (>65 °C) organic compounds, Type P3	Protection for Liquid particles, Gas protection	EN 140, EN 14387
Full face mask	Type A - High-boiling (>65 °C) organic compounds, Type P3	Protection for Liquid particles, Gas protection	EN 136, EN 14387

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	colourless to pale yellow.
Appearance	:	Liquid.
Odour	:	slight.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not available
Boiling point	:	> 200 °C @ 760 mm Hg
Flammability	:	Non flammable.
Explosive properties	:	Not determined.
Oxidising properties	:	Does not meet the criteria for classification as oxidising.
Explosive limits	:	Not applicable
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	> 93 °C Closed cup.
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	Not available
Viscosity, kinematic	:	Not available
Viscosity, dynamic	:	12000 mPa·s @ 25°C
Solubility	:	In water, material is partially soluble.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	1.17 @ 25°C
Relative vapour density at 20°C	:	Not available
Particle characteristics	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

bis-[4-(2,3-epoxipropoxi)phenyl]propane (1675-54-3)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 420 (Acute Oral Toxicity - Fixed Dose Method)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
LD50 dermal rabbit	20000 mg/kg

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (9003-36-5)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

bis-[4-(2,3-epoxipropoxi)phenyl]propane (1675-54-3)	
IARC group	3 - Not classifiable

bis-[4-(2,3-epoxipropoxi)phenyl]propane (1675-54-3)	
NOAEL (chronic, oral, animal/male, 2 years)	15 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Guideline: EPA OPPTS 870.4300 (Combined Chronic Toxicity / Carcinogenicity), Guideline: other:

bis-[4-(2,3-epoxipropoxi)phenyl]propane (1675-54-3)	
NOAEL (chronic, oral, animal/female, 2 years)	100 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Guideline: EPA OPPTS 870.4300 (Combined Chronic Toxicity / Carcinogenicity), Guideline: other:

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (9003-36-5)	
NOAEL (oral, rat, 90 days)	≈ 250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Aspiration hazard : Not classified

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Toxic to aquatic life with long lasting effects.

Not rapidly degradable

bis-[4-(2,3-epoxipropoxi)phenyl]propane (1675-54-3)	
LC50 - Fish [1]	1.2 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 72h - Algae [1]	9.4 mg/l Test organisms (species): Scenedesmus capricornutum
EC50 72h - Algae [2]	> 11 mg/l Test organisms (species): Scenedesmus capricornutum
LOEC (chronic)	1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.3 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (9003-36-5)	
LC50 - Fish [1]	> 1000 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
LC50 - Fish [2]	5.7 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	3.5 mg/l Test organisms (species): Daphnia magna
LOEC (chronic)	1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.3 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

bis-[4-(2,3-epoxipropoxi)phenyl]propane (1675-54-3)	
Partition coefficient n-octanol/water (Log Pow)	3.84 Source: HSDB

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

HP Code : HP4 - "Irritant – skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye.
HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.
HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR) : UN 3082

UN-No. (IMDG) : UN 3082

UN-No. (IATA) : UN 3082

UN-No. (ADN) : UN 3082

UN-No. (RID) : UN 3082

14.2. UN proper shipping name

Proper Shipping Name (ADR) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)

Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)

Proper Shipping Name (ADN) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)

Proper Shipping Name (RID) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)

Transport document description (ADR) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol), 9, III, (-)

Transport document description (IMDG) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol), 9, III, MARINE POLLUTANT

Transport document description (IATA)	:	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol), 9, III
Transport document description (ADN)	:	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol), 9, III
Transport document description (RID)	:	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : bis-[4-(2,3-epoxipropoxi)phenyl]propane ; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol), 9, III

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 9

Danger labels (ADR) : 9

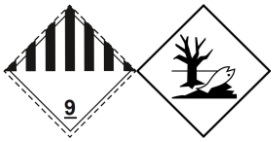
:

IMDG

Transport hazard class(es) (IMDG) : 9

Danger labels (IMDG) : 9

:



IATA

Transport hazard class(es) (IATA) : 9

Danger labels (IATA) : 9

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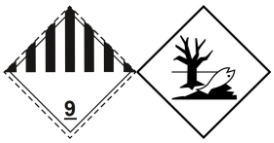

ADN

Transport hazard class(es) (ADN) : 9

Danger labels (ADN) : 9

:

RID

Transport hazard class(es) (RID) : 9

Danger labels (RID) : 9

:

14.4. Packing group

Packing group (ADR)	:	III
Packing group (IMDG)	:	III
Packing group (IATA)	:	III
Packing group (ADN)	:	III
Packing group (RID)	:	III

14.5. Environmental hazards

Dangerous for the environment	:	Yes
Marine pollutant	:	Yes
Other information	:	No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR)	:	M6
Special provisions (ADR)	:	274, 335, 375, 601
Limited quantities (ADR)	:	5l
Excepted quantities (ADR)	:	E1
Packing instructions (ADR)	:	P001, IBC03, LP01, R001
Special packing provisions (ADR)	:	PP1
Mixed packing provisions (ADR)	:	MP19
Portable tank and bulk container instructions (ADR)	:	T4
Portable tank and bulk container special provisions (ADR)	:	TP1, TP29
Tank code (ADR)	:	LGBV
Vehicle for tank carriage	:	AT
Transport category (ADR)	:	3
Special provisions for carriage - Packages (ADR)	:	V12
Special provisions for carriage - Loading, unloading and handling (ADR)	:	CV13
Hazard identification number (Kemler No.)	:	90
Orange plates	:	
Tunnel restriction code (ADR)	:	-
EAC code	:	•3Z

Transport by sea

Special provisions (IMDG)	:	274, 335, 969
Limited quantities (IMDG)	:	5 L
Excepted quantities (IMDG)	:	E1
Packing instructions (IMDG)	:	LP01, P001
Special packing provisions (IMDG)	:	PP1
IBC packing instructions (IMDG)	:	IBC03
Tank instructions (IMDG)	:	T4
Tank special provisions (IMDG)	:	TP1, TP29
EmS-No. (Fire)	:	F-A
EmS-No. (Spillage)	:	S-F
Stowage category (IMDG)	:	A

Air transport

PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Y964
PCA limited quantity max net quantity (IATA)	:	30kgG
PCA packing instructions (IATA)	:	964
PCA max net quantity (IATA)	:	450L
CAO packing instructions (IATA)	:	964
CAO max net quantity (IATA)	:	450L
Special provisions (IATA)	:	A97, A158, A197, A215
ERG code (IATA)	:	9L

Inland waterway transport

Classification code (ADN)	:	M6
Special provisions (ADN)	:	274, 335, 375, 601
Limited quantities (ADN)	:	5 L
Excepted quantities (ADN)	:	E1

Carriage permitted (ADN)	:	T
Equipment required (ADN)	:	PP
Number of blue cones/lights (ADN)	:	0

Rail transport

Classification code (RID)	:	M6
Special provisions (RID)	:	274, 335, 375, 601
Limited quantities (RID)	:	5L
Excepted quantities (RID)	:	E1
Packing instructions (RID)	:	P001, IBC03, LP01, R001
Special packing provisions (RID)	:	PP1
Mixed packing provisions (RID)	:	MP19
Portable tank and bulk container instructions (RID)	:	T4
Portable tank and bulk container special provisions (RID)	:	TP1, TP29
Tank codes for RID tanks (RID)	:	LGBV
Transport category (RID)	:	3
Special provisions for carriage – Packages (RID)	:	W12
Special provisions for carriage - Loading, unloading and handling (RID)	:	CW13, CW31
Colis express (express parcels) (RID)	:	CE8
Hazard identification number (RID)	:	90

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1

The classification complies with : ATP 12

Safety_Data_Sheet_SDS_EU_UK

WEST SYSTEM G/flex 650 Hardener

Safety Data Sheet

According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law, and based on EU 2020/878
Revision date: 13/11/2023 Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Product name : WEST SYSTEM G/flex 650 Hardener
UFI : 6E90-00M5-J00F-U544

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

1.2.1. Relevant identified uses

Intended for general public
Main use category : Professional use
Use of the substance/mixture : Hardener

1.2.2. Uses advised against

Restrictions on use : No uses have been identified that are advised against

1.3. Details of the supplier of the safety data sheet

Manufacturer
Wessex Resins & Adhesives Limited
Cupernham House Cupernham Lane
SO517LF Romsey – Hampshire
United Kingdom
T + 44 (0) 1794 521111
info@wessex-resins.com - www.wessexresins.co.uk

1.4. Emergency telephone number

Emergency number : + 44 (0) 207 858 1228

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Cardiff Centre) University Hospital Llandough	Penlan Road CF64 2XX	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Edinburgh Centre) Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre	16/17 Framlington Place Newcastle-upon-Tyne NE2 4AB	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA	0344 892 0111	Only for healthcare professionals
United Kingdom	NHS 111/NHS 24/NHS Direct		111 0845 4647	or call a doctor

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP], as amended for UK law

Skin corrosion/irritation, Category 2 H315

Serious eye damage/eye irritation, Category 1	H318
Skin sensitisation, Category 1	H317
Specific target organ toxicity – Repeated exposure, Category 2	H373
Hazardous to the aquatic environment – Chronic Hazard, Category 3	H412

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

Adverse physicochemical, human health and environmental effects

Irritating to eyes and skin. Classified as a skin sensitizer. Contains no substances known to be hazardous to the environment.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP], as amended for UK law

Hazard pictograms (CLP) :

GHS05 GHS07 GHS08

Signal word (CLP) : Danger

Contains : 3,6-diazaoctanethylenediamin; triethylenetetramine; 3,6,9-triazaundecamethylenediamine; tetraethylenepentamine; 2-piperazin-1-ylethylamine; m-phenylenebis(methylamine); Butadiene-acrylonitrile co-polymer; Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA; Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled

Hazard statements (CLP) : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H373 - May cause damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP) : P102 - Keep out of reach of children.
P280 - Wear eye protection, face protection, protective gloves.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Labelling according to Regulation (EC) No 1272/2008 [CLP], as amended for UK law
Butadiene-acrylonitrile co-polymer	CAS-No.: 68683-29-4 EC-No.: 614-706-7	≥ 30 – < 60	Skin Sens. 1, H317

Name	Product identifier	%	Labelling according to Regulation (EC) No 1272/2008 [CLP], as amended for UK law
3,6-diazaoctanethylenediamin; triethylenetetramine substance with national workplace exposure limit(s) (EE, LT, PL, RO, SE, IS, NO)	CAS-No.: 112-24-3 EC-No.: 203-950-6 EC Index-No.: 612-059-00-5	≥ 5 – < 10	Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412
m-phenylenebis(methylamine) substance with national workplace exposure limit(s) (AT, BE, DK, FI, FR, IE, PT, IS, NO, MK, CH)	CAS-No.: 1477-55-0 EC-No.: 216-032-5	≥ 5 – < 10	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Acute Tox. 4 (Inhalation), H332 (ATE=1.5 mg/l/4h) Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412
Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA	CAS-No.: 1101788-77-5	≥ 1 – < 5	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317
2,4,6-tris(dimethylaminomethyl)phenol	CAS-No.: 90-72-2 EC-No.: 202-013-9 EC Index-No.: 603-069-00-0	≥ 1 – < 5	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Eye Irrit. 2, H319 Skin Irrit. 2, H315
2-piperazin-1-ylethylamine	CAS-No.: 140-31-8 EC-No.: 205-411-0 EC Index-No.: 612-105-00-4	≥ 1 – < 5	Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412
3,6,9-triazaundecamethylenediamine; tetraethylenepentamine	CAS-No.: 112-57-2 EC-No.: 203-986-2 EC Index-No.: 612-060-00-0	≥ 1 – < 5	Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled	CAS-No.: 8007-24-7 EC-No.: 700-991-6	< 1	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing difficulties persist : Give oxygen or artificial respiration if necessary.

First-aid measures after skin contact	:	Wash immediately with plenty of soap and water. Take off immediately all contaminated clothing and wash it before reuse. Sensitisation : contact can cause allergic reactions in humans. Seek medical attention if ill effect develops.
First-aid measures after eye contact	:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	:	Rinse mouth out with water. Do not induce vomiting. Give nothing or a little water to drink. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	:	Inhalation may cause irritation (cough, short breathing, difficulty in breathing).
Symptoms/effects after skin contact	:	May cause sensitisation by skin contact. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	:	Irritating to eyes.
Symptoms/effects after ingestion	:	May cause discomfort. May cause stomach cramps and vomiting.

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

Treat symptomatically. May cause sensitisation of susceptible persons by skin contact.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	If there is a fire close by, use suitable extinguishing agents. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	:	Use of heavy stream of water may spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	Not flammable. Heating will cause a rise in pressure with a risk of bursting.
Explosion hazard	:	No data available on direct explosion hazard. No data available on indirect explosion hazard.
Hazardous decomposition products in case of fire	:	Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire	:	Evacuate area. Eliminate all ignition sources if safe to do so.
Firefighting instructions	:	Evacuate area. Eliminate all ignition sources if safe to do so. Use water spray or fog for cooling exposed containers.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	:	On exposure to high temperature, may decompose, releasing toxic gases.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Collect spillage. Dispose of contaminated materials in accordance with current regulations.

6.1.1. For non-emergency personnel

Protective equipment	:	Wear recommended personal protective equipment.
Emergency procedures	:	Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Evacuate unnecessary personnel. Keep away from combustible material.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Keep unnecessary and unprotected personnel away from the spillage. Turn leaking containers leak-side up to prevent the escape of liquid. For a large spillage, contain the spillage by bunding. Collect the residue by means of a non-combustible absorbent material. Using a clean shovel, put the material in a dry container and cover without compressing it.

Methods for cleaning up : Mechanically recover the product.

Other information : Dispose of contaminated materials in accordance with current regulations.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Keep container tightly closed and away from heat, sparks and flame.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Storage area : Store in a well-ventilated place.

Special rules on packaging : Store in a closed container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

2-piperazin-1-ylethylamine (140-31-8)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	10.6 mg/m³
Acute - local effects, inhalation	80 µg/m³
Long-term - systemic effects, dermal	3.33 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	10.6 mg/m³
Long-term - local effects, inhalation	15 µg/m³
PNEC (Water)	
PNEC aqua (freshwater)	0.058 mg/l
PNEC aqua (marine water)	0.0058 mg/l
PNEC aqua (intermittent, freshwater)	0.58 mg/l

2-piperazin-1-ylethylamine (140-31-8)	
PNEC (Sediment)	
PNEC sediment (freshwater)	215 mg/kg dwt
PNEC sediment (marine water)	21.5 mg/kg dwt
PNEC (Soil)	
PNEC soil	1 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	250 mg/l

m-phenylenebis(methylamine) (1477-55-0)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	0.33 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1.2 mg/m³
Long-term - local effects, inhalation	0.2 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	0.094 mg/l
PNEC aqua (marine water)	0.0094 mg/l
PNEC aqua (intermittent, freshwater)	0.152 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	12.4 mg/kg dwt
PNEC sediment (marine water)	1.24 mg/kg dwt
PNEC (Soil)	
PNEC soil	2.44 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:
Wear recommended personal protective equipment.

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Chemical goggles or safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Protective gloves

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Disposable gloves, Reusable gloves	Nitrile rubber (NBR)	2 (> 30 minutes)	≥ 0.13		EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. In case of insufficient ventilation, wear suitable respiratory equipment

Respiratory protection			
Device	**Filter type**	**Condition**	**Standard**
Disposable half mask	Type A - High-boiling (>65 °C) organic compounds, Type P3	Protection for Liquid particles, Gas protection	EN 140, EN 14387
Reusable half mask	Type A - High-boiling (>65 °C) organic compounds, Type P3	Protection for Liquid particles, Gas protection	EN 140, EN 14387
Full face mask	Type A - High-boiling (>65 °C) organic compounds, Type P3	Protection for Liquid particles, Gas protection	EN 136, EN 14387

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	amber.
Appearance	:	Viscous liquid.
Odour	:	ammonia.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not available
Boiling point	:	> 250 °C 760 mm Hg
Flammability	:	Non flammable.
Explosive properties	:	Not determined.
Oxidising properties	:	Does not meet the criteria for classification as oxidising.
Explosive limits	:	Not applicable
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	> 93 °C Closed cup.
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	Not available
Viscosity, kinematic	:	Not available
Viscosity, dynamic	:	21000 mPa·s @ 25°C

Solubility	:	In water, material is partially soluble.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	0.97 @ 25°C
Relative vapour density at 20°C	:	Not available
Particle characteristics	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

3,6-diazaoctanethylenediamin; triethylenetetramine (112-24-3)	
LD50 oral rat	2500 mg/kg
LD50 dermal rabbit	805 mg/kg

3,6,9-triazaundecamethylenediamine; tetraethylenepentamine (112-57-2)	
LD50 oral rat	3990 mg/kg
LD50 dermal rabbit	660 mg/kg

2-piperazin-1-ylethylamine (140-31-8)	
LD50 oral rat	2108 mg/kg Source: OECD Screening Information Data Set
LD50 dermal rabbit	886 mg/kg Source: OECD Screening Information Data Set

m-phenylenebis(methylamine) (1477-55-0)	
LD50 oral rat	930 mg/kg Source: ECHA
LD50 dermal rat	> 3100 mg/kg bodyweight Animal: rat
LD50 dermal rabbit	> 3100 mg/kg Source: ECHA
LC50 Inhalation - Rat (Dust/Mist)	1.12 mg/l Source: ECHA

Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled (8007-24-7)	
LD50 oral rat	5000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LD50 oral rat	1200 mg/kg
LD50 dermal rat	1280 mg/kg

Skin corrosion/irritation : Causes skin irritation.

3,6-diazaoctanethylenediamin; triethylenetetramine (112-24-3)	
pH	14

Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled (8007-24-7)	
pH	6.7 Temp.: 25 °C Concentration: 1 vol%

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
pH	11

Serious eye damage/irritation : Causes serious eye damage.

3,6-diazaoctanethylenediamin; triethylenetetramine (112-24-3)	
pH	14

Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled (8007-24-7)	
pH	6.7 Temp.: 25 °C Concentration: 1 vol%

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
pH	11

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

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled (8007-24-7)	
LOAEL (oral, rat, 90 days)	500 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
NOAEL (oral, rat, 90 days)	15 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Aspiration hazard : Not classified

2-piperazin-1-ylethylamine (140-31-8)	
Viscosity, kinematic	14.286 mm²/s

Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled (8007-24-7)	
Viscosity, kinematic	159.983 mm²/s

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Harmful to aquatic life with long lasting effects.

Not rapidly degradable

2-piperazin-1-ylethylamine (140-31-8)	
LC50 - Fish [1]	368 mg/l Source: OECD Screening Information Data Set
EC50 - Crustacea [1]	32 mg/l Source: OECD Screening Information Data Set
EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

m-phenylenebis(methylamine) (1477-55-0)	
LC50 - Fish [1]	87.6 mg/l
EC50 - Crustacea [1]	15.2 mg/l
EC50 72h - Algae [1]	20.3 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	33.3 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
ErC50 algae	33.3 mg/l Source: EHCA
LOEC (chronic)	15 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	4.7 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled (8007-24-7)	
LC50 - Fish [1]	0.08 – 0.2 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 72h - Algae [1]	1.4 mg/l Test organisms (species): Chlorella vulgaris
EC50 96h - Algae [1]	0.000342 mg/l Source: Ecological Structure Activity Relationships
NOEC (chronic)	10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0.000192 mg/l Test organisms (species): other: Duration: '28 d'

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LC50 - Fish [1]	447.821 mg/l
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	46.7 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
EC50 72h - Algae [2]	25.5 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	34.812 mg/l Source: ECOSAR

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

3,6-diazaoctanethylenediamin; triethylenetetramine (112-24-3)	
Partition coefficient n-octanol/water (Log Pow)	-2.65

3,6,9-triazaundecamethylenediamine; tetraethylenepentamine (112-57-2)	
Partition coefficient n-octanol/water (Log Pow)	-3.16

2-piperazin-1-ylethylamine (140-31-8)	
Partition coefficient n-octanol/water (Log Pow)	-1.48 Source: National Institute of Technology and Evaluation

m-phenylenebis(methylamine) (1477-55-0)	
Partition coefficient n-octanol/water (Log Pow)	0.18

Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled (8007-24-7)	
Partition coefficient n-octanol/water (Log Pow)	8.37 Source: Quantitative Structure Activity Relation

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Partition coefficient n-octanol/water (Log Pow)	0.77

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

HP Code : HP8 - "Corrosive:" waste which on application can cause skin corrosion.
HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.
HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR)	:	Not regulated
UN-No. (IMDG)	:	Not regulated
UN-No. (IATA)	:	Not regulated
UN-No. (ADN)	:	Not regulated
UN-No. (RID)	:	Not regulated

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	Not regulated
Proper Shipping Name (IMDG)	:	Not regulated
Proper Shipping Name (IATA)	:	Not regulated
Proper Shipping Name (ADN)	:	Not regulated
Proper Shipping Name (RID)	:	Not regulated

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not regulated

IMDG

Transport hazard class(es) (IMDG) : Not regulated

IATA

Transport hazard class(es) (IATA) : Not regulated

ADN

Transport hazard class(es) (ADN) : Not regulated

RID

Transport hazard class(es) (RID) : Not regulated

14.4. Packing group

Packing group (ADR)	:	Not regulated
Packing group (IMDG)	:	Not regulated
Packing group (IATA)	:	Not regulated
Packing group (ADN)	:	Not regulated
Packing group (RID)	:	Not regulated

14.5. Environmental hazards

Dangerous for the environment	:	No
Marine pollutant	:	No
Other information	:	No supplementary information available

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration

Abbreviations and acronyms:	
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

Full text of H- and EUH-statements:	
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1B	Skin sensitisation, category 1B
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

The classification complies with : ATP 12

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