SAFETY DATA SHEET ACCORDING TO REGULATION (EC) 1907/2006

Product name: BX Comp. B 60 (3.5 kg)

Creation date: 20.05.2021, Revision: 17.03.2023, version: 2.1

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name

BX Comp. B 60 (3.5 kg)

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

Relevant identified uses

Hardener

Uses advised against

No information.

1.3 Details of the supplier of the safety data sheet

Supplier

Boldan Oy, Matkuntie 3, 05200 RAJAMÄKI, FINLAND
tel. +358 (0)9 8531042, info@boldan.fi

1.4 Emergency Telephone Number

Emergency

112

Supplier

Boldan Oy, Matkuntie 3, 05200 RAJAMÄKI, FINLAND
tel. +358 (0)9 8531042, info@boldan.fi

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Acute Tox. 4; H302 Harmful if swallowed.
Acute Tox. 4; H312 Harmful in contact with skin.
Skin Corr. 1A; H314 Causes severe skin burns and eye damage.
Skin Sens. 1; H317 May cause an allergic skin reaction.
Eye Dam. 1; H318 Causes serious eye damage.
Aquatic Chronic 3; H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

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

Signal word: DANGER

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 + P331 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting.
P303 + P361 + P353 + P310 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with national regulation.

Contains:
3-aminomethyl-3,5,5-trimethylcyclohexylamine
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine
M-phenylenebis (methylamine)
2-methylpentane-1,5-diamine

2.3 Other hazards

PBT/vPvB
No information.

Endocrine disrupting properties
No information.

Additional information
The substances in the product are not classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

For mixtures see 3.2.

3.2 Mixtures

Name	CAS EC Index Reach	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	Notes for substances
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2 220-666-8 612-067-00-9 01-2119514687-32	30-50	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 Aquatic Chronic 3; H412	/	/

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylami ne	38294-64-3 500-101-4 -	15-30	Skin Corr. 1B; H314 Skin Sens. 1; H317 Eye Dam. 1; H318 Aquatic Chronic 3; H412	/	/
M-phenylenebis (methylamine)	1477-55-0 216-032-5 - 01-2119480150-50	10-15	Acute Tox. 4; H302 Skin Corr. 1B; H314 Skin Sens. 1; H317 Eye Dam. 1; H318 Acute Tox. 4; H332 Aquatic Chronic 3; H412	/	/
2-methylpentane-1,5-diamine	15520-10-2 239-556-6 - 01-2119976310-41	6-15	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1A; H314 Eye Dam. 1; H318 Acute Tox. 4; H332 STOT SE 3; H335	/	/

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General notes

Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Following inhalation

Remove patient to fresh air - move out of dangerous area. Victim should rest in a warm place. If symptoms develop and persist, seek medical attention.

Following skin contact

Immediately remove contaminated clothing. Areas of the body that have come into contact with the product must be rinsed with water. Immediately obtain professional medical help! Wash contaminated clothes and shoes before reuse.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. Consult a physician immediately! Small amounts splashed into eyes can cause irreversible tissue damage and blindness. Continue rinsing. If the patient is wearing contact lenses, remove them immediately.

Following ingestion

Do not induce vomiting! Rinse mouth with water and drink a glass of water by sips! Do not drink milk or alcoholic beverages. Immediately consult a doctor. Show the physician the safety data sheet or label. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Following inhalation

Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation. Coughing, sneezing, nasal discharge, labored breathing.

Following skin contact

Harmful. Causes severe burns. Skin burns: Signs/symptoms may include localised redness, swelling, itching, dryness, blistering. May cause sensitisation by skin contact (itching, redness, rashes).

Following eye contact

Causes burns: signs/symptoms include corneal damage, burns, pain, lacrimation, corrosive effects, partial or complete lost of sight.

Following ingestion

Harmful to health. If ingested, causes severe burns of the mouth and throat, as well as perforation of the esophagus and stomach. May cause nausea/vomiting and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Full water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In case of a fire toxic gases can be generated; do not inhale gases/smoke.

5.3 Advice for firefighters

Protective actions

In case of fire or heating do not breathe fumes/vapours. Cool containers at risk with water spray. If possible remove containers from endangered area. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves)(EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8). Refer to protective measures listed in Sections 7 and 8.

Precautionary measures

Ensure adequate ventilation.

Emergency procedures

Prevent access to unprotected personnel. Do not breathe vapour or mist. Avoid contact with skin, eyes and clothing. Avoid contact with spilled product or contaminated surfaces.

For emergency responders

During intervention, use personal protective equipment (Section 8).

6.2 Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. In case of release into the environment, inform the relevant authorities.

6.3 Methods and material for containment and cleaning up

For containment

Stem the spill if this does not pose risks.

For cleaning up

Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Clean contaminated area with plenty of water. Retain and dispose of contaminated wash water.

OTHER INFORMATION

See Section 1 for contact information in case of emergency.

6.4 Reference to other sections

See also sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures

Measures to prevent fire

Ensure adequate ventilation. The usual measures for preventive fire protection.

Measures to prevent aerosol and dust generation

No information.

Measures to protect the environment

Do not discharge into drains, surface water and soil. After use immediately close container tightly.

Other measures

No information.

Advice on general occupational hygiene

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes. Product is not for eating – do not ingest! Do not breathe vapours/mist. Wear suitable protective equipment; see Section 8. Remove contaminated clothes and wash them before reuse. Obtain special instructions before use. To avoid spills during handling keep bottle on a metal tray.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep in a cool, dry and well ventilated place. Keep away from food, drink and animal feeding stuffs. Keep in tightly closed container. Store between: 2 - 40 °C Do not store in unlabelled containers. Keep away from incompatible products (see section 10).

Packaging materials

The original container of producer.

Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking. The floor of the storage room must be impermeable and resistant to chemicals (base, acid). Do not store in unlabelled containers.

Storage class

No information.

Further information on storage conditions

No information.

7.3 Specific end use(s)

Recommendations

See identified uses in Section 1.2.

Industrial sector specific solutions

No information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

No information.

Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

DNEL/DMEL values

For product

No information.

For components

Name	Type	Exposure route	exp. frequency	Remark	value
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Consumer	oral	long term systemic effects	/	0.526 mg/kg bw/day
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Worker	inhalation	long term local effects	/	0.073 mg/m³
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Worker	inhalation	short term local effects	/	0.073 mg/m³
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	Worker	inhalation	long term systemic effects	/	493 µg/m3
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	Worker	dermal	long term systemic effects	/	140 µg/kg bw/day
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	Consumer	inhalation	long term systemic effects	/	74 µg/m3
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	Consumer	dermal	long term systemic effects	/	50 µg/kg bw/day
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	Consumer	oral	long term systemic effects	/	50 µg/kg bw/day
M-phenylenebis (methylamine)	Worker	inhalation	long term systemic effects	/	1.2 mg/m³

M-phenylenebis (methylamine)	Worker	inhalation	long term local effects	/	0.2 mg/m³
M-phenylenebis (methylamine)	Worker	dermal	long term systemic effects	/	0.33 mg/kg bw/day
2-methylpentane-1,5-diamine	Worker	inhalation	long term local effects	/	0.25 mg/m^3
2-methylpentane-1,5-diamine	Worker	inhalation	short term local effects	/	0.5 mg/m^3
2-methylpentane-1,5-diamine	Worker	dermal	long term systemic effects	/	1.5 mg/kg bw/day
2-methylpentane-1,5-diamine	Consumer	inhalation	long term local effects	/	0.125 mg/m^3
2-methylpentane-1,5-diamine	Consumer	inhalation	short term local effects	/	0.25 mg/m^3
2-methylpentane-1,5-diamine	Consumer	dermal	long term systemic effects	/	0.75 mg/kg bw/day
2-methylpentane-1,5-diamine	Consumer	oral	long term systemic effects	/	0.75 mg/kg bw/day

PNEC values

For product

No information.

For components

Name	Exposure route	Remark	value
3-aminomethyl-3,5,5-trimethylcyclohexylamine	fresh water	/	0.06 mg/L
3-aminomethyl-3,5,5-trimethylcyclohexylamine	marine water	/	0.006 mg/L
3-aminomethyl-3,5,5-trimethylcyclohexylamine	water treatment plant	/	3.18 mg/L
3-aminomethyl-3,5,5-trimethylcyclohexylamine	fresh water sediment	/	5.784 mg/kg
3-aminomethyl-3,5,5-trimethylcyclohexylamine	marine water sediment	/	0.578 mg/kg
3-aminomethyl-3,5,5-trimethylcyclohexylamine	soil	/	1.121 mg/kg dw
3-aminomethyl-3,5,5-trimethylcyclohexylamine	water, intermittent release	/	0.23 mg/L
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	fresh water	/	11.1 µg/l
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	water, intermittent release	fresh water	111 µg/l
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	marine water	/	1.11 µg/l
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	water treatment plant	/	10 mg/L
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	fresh water sediment	dry weight	4320 mg/kg

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	marine water sediment	dry weight	432 mg/kg
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	soil	dry weight	864 mg/kg
M-phenylenebis (methylamine)	fresh water	/	0.094 mg/L
M-phenylenebis (methylamine)	marine water	/	0.009 mg/L
M-phenylenebis (methylamine)	water, intermittent release	/	0.152 mg/L
M-phenylenebis (methylamine)	water treatment plant	/	10 mg/L
M-phenylenebis (methylamine)	fresh water sediment	/	12.4 mg/kg dw
M-phenylenebis (methylamine)	marine water sediment	/	1.24 mg/kg dw
M-phenylenebis (methylamine)	soil	/	2.44 mg/kg dw
2-methylpentane-1,5-diamine	fresh water	/	0.42 mg/L
2-methylpentane-1,5-diamine	water, intermittent release	/	0.42 mg/L
2-methylpentane-1,5-diamine	marine water	/	0.042 mg/L
2-methylpentane-1,5-diamine	water treatment plant	/	1.25 g/L
2-methylpentane-1,5-diamine	fresh water sediment	dry weight	7.58 mg/kg
2-methylpentane-1,5-diamine	marine water sediment	dry weight	0.758 mg/kg
2-methylpentane-1,5-diamine	soil	dry weight	1.27 mg/kg

8.2 Exposure controls

Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Avoid contact with eyes and skin. Do not breathe vapours/aerosols. Do not eat, drink or smoke while working. Handle in accordance with good industrial hygiene and safety practice.

Structural measures to prevent exposure

No information.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse. Appropriate techniques should be used to remove potentially contaminated clothing. Keep eyewash bottles or personal eyewash units and emergency showers available.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration. Keep away from food, drink and animal feeding stuffs.

Personal protective equipment

Eye and face protection

Wear tight fitting protective goggles and/or face protection (EN 166).

Hand protection

Protective gloves (EN 374). The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately.

Appropriate materials

Material	Thickness	Penetration Time	Remark
Butyl rubber	/	> 480 min	BS EN ISO 374
nitrile rubber	/	< 480 min	BS EN ISO 374

Skin protection

Cotton protective clothing and shoes that cover the entire foot (BS EN ISO 20345:2022). At high risk of skin exposure chemical suits (BS EN ISO 6530:2005) and boots may be required (BS EN ISO 20345:2022).

Respiratory protection

Wear suitable protective breathing mask (EN 136) with filter A2-P2 (EN 14387). For dust/gas/ vapor concentrations above the applicable filter limit, in case of oxygen concentrations below 17% or in vague conditions, autonomous self-contained breathing apparatus should be used, according to standard BS EN 137, BS EN 138.

Thermal hazards

No information.

Environmental exposure controls

Substance/mixture related measures to prevent exposure

Implement measures to protect the environment. Avoid discharge into drains and surface waters.

Instruction measures to prevent exposure

No information.

Organisational measures to prevent exposure

No information.

Technical measures to prevent exposure

Prevent release into in the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state

liquid

Colour

No information.

Odour

No information.

Important health, safety and environmental information

Odour threshold	No information.
Melting point/Freezing point	No information.
Boiling point or initial boiling point and boiling range	> 170 °
Flammability	No information.
Lower and upper explosion limit	No information.
Flash point	> 100 °
Auto-ignition temperature	No information.
Decomposition temperature	No information.
pH	No information.
Viscosity	No information.
Solubility	Water: Soluble
Partition coefficient	No information.
Vapour pressure	No information.
Density and/or relative density	No information.
Relative vapour density	No information.
Particle characteristics	No information.

9.2 OTHER INFORMATION

Explosive properties	No information.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No information.

10.2 Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3 Possibility of hazardous reactions

The product is stable under recommended storage and handling conditions.

10.4 Conditions to avoid

No special precautions required. Consider the directions for use and storage.

10.5 Incompatible materials

Strong oxidising agents.
Strong acids.
Strong bases.

10.6 Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released. Nitrogen oxides (NOx). Carbon dioxide; Carbon monoxide.

SECTION 11: TOXICOLOGICAL INFORMATION

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

(a) Acute toxicity

For components

Name	Exposure route	Type	Species	Time	value	Method	Remark
M-phenylenebis (methylamine)	dermal	LD_{50}	rat	/	> 3100 mg/kg	/	/

Additional information

Harmful if inhaled. Harmful if swallowed. Harmful in contact with skin.

(b) Skin corrosion/irritation

For components

Name	Species	Time	result	Method	Remark
3-aminomethyl-3,5,5-trimethylcyclohexylamine	rabbit	/	Corrosive.	/	/
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	human	/	Corrosive.	OECD 431	/
M-phenylenebis (methylamine)	rat	/	Causes serious burns.	Directive 67/548/EEC, Annex V, B.4.	/
2-methylpentane-1,5-diamine	rabbit	/	Corrosive	OECD 404	/

Additional information

Causes severe skin burns.

(c) Serious eye damage/irritation

For components

Name	Exposure route	Species	Time	result	Method	Remark
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	/	/	/	Risk of serious damage to eyes.	/	/
2-methylpentane-1,5-diamine	/	rabbit	/	It causes serious eye damage.	/	/

Additional information

Causes serious eye damage.

(d) Respiratory or skin sensitisation

For components

Name	Exposure route	Species	Time	result	Method	Remark
M-phenylenebis(methylamine)	dermal	mouse	/	May cause sensitisation by skin contact.	OECD 429	/

Additional information

May cause an allergic skin reaction.

(e) (Germ cell) mutagenicity

For components

Name	Type	Species	Time	result	Method	Remark
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	in-vitro mutagenicity	/	/	Negative with metabolic activation, negative without metabolic activation.	OECD 471	/
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	in-vitro mutagenicity	/	/	Negative with metabolic activation, negative without metabolic activation.	OECD 476	/
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	in-vitro mutagenicity	Cell: Mammalian-Animal	/	Negative with metabolic activation, negative without metabolic activation.	OECD 473	/
M-phenylenebis(methylamine)	in-vitro mutagenicity	bacteria (*Salmonella typhimurium*)	/	Negative with metabolic activation, negative without metabolic activation.	OECD 471	Ames test
M-phenylenebis(methylamine)	in-vitro mutagenicity	Chinese hamster lung fibroblasts.	/	Negative with metabolic activation, negative without metabolic activation.	OECD 473	Chromosome aberration assay

M-phenylenebis (methylamine)	in-vitro mutagenicity	mouse (lymphoma cells)	/	Negative with metabolic activation, negative without metabolic activation.	OECD 476	/
M-phenylenebis (methylamine)	in-vivo mutagenicity	mouse (bone marrow)	/	Negative.	OECD 474	oral; single dose 750 mg/kg body weight
M-phenylenebis (methylamine)	in-vitro mutagenicity	Bacteria	/	Negative.	/	/
M-phenylenebis (methylamine)	in-vitro mutagenicity	Cell: Mammalian-Animal	/	Negative.	/	/
M-phenylenebis (methylamine)	/	/	/	Animal testing did not show any mutagenic effects.	/	/
2-methylpentane-1,5-diamine	in-vitro mutagenicity	/	/	Negative.	OECD 471	/
2-methylpentane-1,5-diamine	in-vitro mutagenicity	Cell: Mammalian-Animal	/	Negative with metabolic activation, negative without metabolic activation.	OECD 473	/
2-methylpentane-1,5-diamine	in-vitro mutagenicity	/	/	Negative with metabolic activation, negative without metabolic activation.	OECD 476	/
2-methylpentane-1,5-diamine	in-vivo mutagenicity	/	/	Negative.	OECD 474	/

(f) Carcinogenicity

No information.

(g) Reproductive toxicity

For components

Name	Reproductive toxicity type	Type	Species	Time	value	result	Method	Remark
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Teratogenicity	NOEL	rat (female)	/	50 mg/kg bw	/	OECD 414	oral
M-phenylenebis (methylamine)	Effects on fertility	NOEL	rat	/	50 - 150 mg/kg bw	No effect	OECD 421	oral; Dose: 0, 50, 150 and 450 mg/kg
M-phenylenebis (methylamine)	Effects on fertility	NOEL	rat (F1)	/	450 mg/kg bw	No effect	OECD 421	oral; Dose: 0, 50, 150 and 450 mg/kg
M-phenylenebis (methylamine)	Maternal toxicity	NOAEL	rat	19 days	100 mg/kg bw	Negative.	OECD 414	Oral; Dose: 0, 30, 100, 300 mg/kg; 19 days - Frequency of Treatment: 1 daily
M-phenylenebis (methylamine)	Effects on fertility	NOAEL	rat	19 days	300 mg/kg bw	Negative.	OECD 414	Oral; Dose: 0, 30, 100, 300 mg/kg; 19 days - Frequency of Treatment: 1 daily
2-methylpentane-1,5-diamine	Maternal toxicity	NOAEL	rat	/	ca. 184 mg/kg bw	No effect	OECD 414	oral

Summary of evaluation of the CMR properties

The product is not classified as carcinogenic, mutagenic or toxic for reproduction.

(h) STOT-single exposure

For components

Name	Exposure route	Type	Species	Time	Exposure	organ	value	result	Method	Remark
2-methylpentane-1,5-diamine	inhalation	-	/	/	/	/	/	Irritating to respiratory system.	/	/

Additional information

STOT SE (single exposure): Not classified.

(i) STOT-repeated exposure

For components

Name	Exposure route	Type	Species	Time	Exposure	organ	value	result	Method	Remark
3-aminomethyl-3,5,5-trimethylcyclohexylamine	oral	NOAEL	rat	216 h	sub-chronic	/	60 mg/kg bw/day	/	/	/
M-phenylenebis (methylamine)	oral	NOEL	rat	672 h	chronic	/	150 mg/kg	/	OECD 407	Dose: 0, 10, 40, 150 and 600 mg/kg/day

Additional information

STOT RE (repeated exposure): Not classified.

(j) Aspiration hazard

For components

Name	result	Method	Remark
2-methylpentane-1,5-diamine	ASPIRATION HAZARD	/	/

Additional information

Aspiration hazard: Not classified.

Symptoms related to the physical, chemical and toxicological characteristics

No information.

Interactive effects

No information.

11.2 Information on other hazards

Endocrine disrupting properties

No information.

Other information

No information.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute (short-term) toxicity

For components

Name	Type	value	Exposure time	Species	organism	Method	Remark
3-aminomethyl-3,5,5-trimethylcyclohexylamine	LC_{50}	110 mg/L	96 h	fish	*Leuciscus idus*	Directive 67/548/EEC, Annex V, C.1. Directive 67/548/EEC, Annex V, C.1.	Semi-static system

3-aminomethyl-3,5,5-trimethylcyclohexylamine	EC_{50}	23 mg/L	48 h	crustacea	*Daphnia magna*	OECD 202	static system
3-aminomethyl-3,5,5-trimethylcyclohexylamine	EC_{50}	37 mg/L	48 h	crustacea	*Daphnia magna*	Directive 67/548/EEC, Annex V, C.2. Directive 67/548/EEC, Annex V, C.2.	Static system, Fresh water
3-aminomethyl-3,5,5-trimethylcyclohexylamine	EC_{10}	1120 mg/L	18 h	bacteria	*Pseudomonas putida*	/	Static system, Fresh water
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	LL_{50}	70.7 mg/L	96 h	fish	*Oncorhynchus mykiss*	OECD 203	Static system, Fresh water
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	EL_{50}	11.1 mg/L	48 h	crustacea	*Daphnia magna*	OECD 202	Static system, Fresh water
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	EL_{50}	79.4 mg/L	72 h	algae	*Selenastrum capricornutum*	OECD 201	Static system, Fresh water
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	EC_{50}	≥ 1000 mg/L	3 h	bacteria	Activated sludge	OECD 209	Static system, Fresh water
M-phenylenebis(methylamine)	LC_{50}	87.6 mg/L	96 h	fish	*Oryzias latipes*	OECD 203 OECD 203	Semi-static system
M-phenylenebis(methylamine)	EC_{50}	15.2 mg/L	48 h	crustacea	*Daphnia magna*	OECD 202	static system
M-phenylenebis(methylamine)	ErC_{50}	32.1 mg/L	72 h	algae	*Selenastrum capricornutum*	OECD 201	static system
M-phenylenebis(methylamine)	EC_{50}	> 1000 mg/L	3 h	bacteria	Activated sludge	OECD 209	Static system, Fresh water
2-methylpentane-1,5-diamine	LC_{50}	1825 mg/L	96 h	fish	*Pimephales promelas*	OECD 203	static system

2-methylpentane-1,5-diamine	EC_{50}	23.4 mg/L	48 h	crustacea	*Daphnia magna*	OECD 202 OECD 202	fresh water
2-methylpentane-1,5-diamine	ErC_{50}	> 100 mg/L	72 h	algae	*Selenastrum capricornutum*	OECD 201	static system

Chronic (long-term) toxicity

For components

Name	Type	value	Exposure time	Species	organism	Method	Remark
M-phenylenebis (methylamine)	NOEC	4.7 mg/l	21 days	crustacea	*Daphnia magna*	OECD 211	semi-static system
2-methylpentane-1,5-diamine	NOEC	4.16 mg/l	21 days	crustacea	*Daphnia magna*	OECD 211	semi-static, fresh water

12.2 Persistence and degradability

Abiotic degradation, physical- and photo-chemical elimination

No information.

Biodegradation

For components

Name	Type	Rate	Time	Evaluation	Method	Remark
3-aminomethyl-3,5,5-trimethylcyclohexyl amine	aerobic	8 %	28 days	Not readily biodegradable.	67/548/EEC Anex V, C.4.A	activated sludge
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexyl amine	biodegradability	0 %	28 days	/	OECD 301 F	activated sludge; Concentration: 32.5 mg/l
M-phenylenebis (methylamine)	aerobic	49 %	28 days	Not readily biodegradable.	OECD 301 B	activated sludge; Concentration: 14,2 mg/l
2-methylpentane-1,5-diamine	aerobic	/	28 days	readily biodegradable	OECD 301 D	activated sludge; 1,1 mg/l

12.3 Bioaccumulative potential

Partition coefficient

For components

Name	Media	value	Temperature °C	pH	Concentration	Method
3-aminomethyl-3,5,5-trimethylcyclohexyl amine	Log Pow	0.99	23	6.34	/	OECD 107
M-phenylenebis (methylamine)	Log Pow	0.18	25	10.4	/	OECD 107
2-methylpentane-1,5-diamine	Log Pow	≤ 1	25	9	/	/

Bioconcentration factor (BCF)

For components

Name	Species	organism	value	Duration	Evaluation	Method	Remark
M-phenylenebis (methylamine)	BCF	*Cyprinus carpio*	< 0.3	/	Bioaccumulation is not expected.	/	/

2-methylpentane-1,5-diamine	BCF	/	3	/	/	/	/
2-methylpentane-1,5-diamine	bioaccumulation	/	/	/	Bioaccumulation is not expected.	/	/

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

No information.

Surface tension

No information.

Adsorption/Desorption

For components

Name	Type	Criterion	value	Evaluation	Method	Remark
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Soil	/	928	/	/	Koc

12.5 Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6 Endocrine disrupting properties

No information.

12.7 Other adverse effects

No information.

12.8 Additional information

For product

Harmful to aquatic organisms. May cause long term adverse effects in the aquatic environment. Do not allow to reach ground water, water courses or sewage system.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / Packaging disposal

Waste chemical

Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Do not allow product to reach drains/sewage systems. Waste should be handled in accordance with local or national regulations.

Waste codes / waste designations according to LoW

No information.

Packaging

Deliver completely emptied containers to approved waste disposal authorities. Uncleaned containers are classified as hazardous waste - they should be handled in the same manner as the contents. Dispose of in accordance with applicable waste disposal regulation.

Waste codes / waste designations according to LoW

No information.

Waste treatment-relevant information

No information.

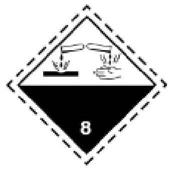
Sewage disposal-relevant information

No information.

Other disposal recommendations

No information.

SECTION 14: TRANSPORT INFORMATION

ADR/RID	IMDG	IATA	ADN
14.1 UN number or ID number			
UN 2735	UN 2735	UN 2735	UN 2735
14.2 UN proper shipping name			
POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)
14.3 Transport hazard class(es)			
8	8	8	8
			
14.4 Packing group			
II	II	II	II
14.5 Environmental hazards			
NO	NO	NO	NO
14.6 Special precautions for user			

Limited quantities 1 L Special provisions 274 Packing Instructions P001, IBC02 Transport category 2 Tunnel restriction code (E)	Limited quantities 1 L EmS F-A, S-B Flash point°C	Limited Quantity, Packing Instructions (Ltd Qty, Pkg Inst) Y840 Limited Quantity, Maximum Net Quantity/Package (Ltd Qty, Max Net Qty/Pkg) 0.5 L Packing Instructions (Pkg Inst) 851 Maximum Net Quantity/Package (Max Net Qty/Pkg) 1 L Cargo Aircraft Only, Packing Instructions (CAO, Pkg Inst) 855 Cargo Aircraft Only, Maximum Net Quantity/Package (CAO, Max Net Qty/Pkg) 30 L Special provisions A803 Excepted quantities E2 ERG code 8L	Limited quantities 1 L
14.7 Maritime transport in bulk according to IMO instruments			
	Goods may not be carried in bulk in bulk containers, containers or vehicles.		

SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

not applicable

Regulation EC 648/2004 on detergents

No information.

Special instructions

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%. Observe the regulations on employment and protection against dangerous substances for young people, pregnant women and nursing mothers.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION

Indication of changes

2.2 Label elements 8.2 Exposure controls

Key literature references and sources for data

No information.

Abbreviations and acronyms

ATE - Acute Toxicity Estimate
ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet

SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

List of relevant H phrases

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.