BELZONA® 1821 - FLUID METAL - SOLIDIFIER
SN2676

Date of compilation: 4/2/2024 Revised: 4/7/2025 Version: 1.1 (Replaced 1)

SECTION 1: IDENTIFICATION

1.1 Product identifier: BELZONA® 1821 - FLUID METAL - SOLIDIFIER
SN2676

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses (Industrial user): High performance coatings

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, U.S. address, and U.S. telephone number of the chemical manufacturer, importer, or other responsible party:

Belzona Limited
Claro Road
HG1 4DS Harrogate - North Yorkshire - England
Phone: +441423567641
sds@belzona.com
https://www.belzona.com

Belzona Inc.
14300 NW 60th Ave.
Miami Lakes
FL 33014
UNITED STATES
Telephone: 1-305-594-4994

1.4 Emergency phone number: VelocityEHS: +1 813-248-0585 (International) (24/7/365)

US, Puerto Rico & the U.S. Virgin Islands: 1-800-255-3924 (24/7)

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

NFPA:

Health Hazards: 3
Flammability Hazards: 1
Instability Hazards: 0
Special Hazards: Non-applicable

29 CFR 1910.1200:

Classification of the chemical in accordance with paragraph (d)(1)(i) of §1910.1200

Acute Tox. 4: Acute toxicity if swallowed, Category 4, H302
Eye Dam. 1: Serious eye damage, Category 1, H318
Skin Corr. 1A: Skin corrosion, Category 1A, H314
Skin Sens. 1A: Sensitisation, skin, Category 1A, H317
STOT RE 1: Specific target organ toxicity, repeated exposure, Category 1, H372

2.2 Label elements:

NFPA:

29 CFR 1910.1200:

Danger

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SECTION 2: HAZARD(S) IDENTIFICATION (continued)

Hazard statements:

Acute Tox. 4: H302 - Harmful if swallowed.
Skin Corr. 1A: H314 - Causes severe skin burns and eye damage.
Skin Sens. 1A: H317 - May cause an allergic skin reaction.
STOT RE 1: H372 - Causes damage to organs through prolonged or repeated exposure.

Precautionary statements:

P260: Do not breathe vapors.
P264: Wash hands thoroughly after handling.
P272: Contaminated work clothing should not be allowed out of the workplace.
P280: Wear protective gloves, protective clothing and eye protection.
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.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 the contents/container in accordance with all Federal, State/Provincial and local regulations.

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

3.2 Mixtures:

Chemical description: Formulated polyamines

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name	Concentration
CAS: 25513-64-8	**2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine**	**30 - <60 %**
CAS: 100-51-6	**benzyl alcohol**	**10 - <30 %**
CAS: 57214-10-5	**Formaldehyde polymer with 1,3-benzenedimethanamine and phenol**	**10 - <30 %**
CAS: 1477-55-0	**m-phenylenebis(methylamine)**	**5 - <10 %**
CAS: 72480-18-3	**4,4'Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3epoxypropane , reaction products with ethylene diamine**	**5 - <10 %**
CAS: 104-15-4	**p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)**	**1 - <5 %**
CAS: 90-72-2	**2,4,6-tris(dimethylaminomethyl)phenol**	**1 - <5 %**
CAS: 61791-55-7	**Amines, N-tallow alkyltrimethylenedi-**	**1 - <5 %**

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

Other information:

Identification	M-factor	
Formaldehyde polymer with 1,3-benzenedimethanamine and phenol	Acute	1
CAS: 57214-10-5	Chronic	1

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Identification	M-factor	
4,4'Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3epoxypropane , reaction products with ethylene diamine	Acute	1
CAS: 72480-18-3	Chronic	1
Amines, N-tallow alkyltrimethylenedi-	Acute	10
CAS: 61791-55-7	Chronic	1

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request immediate medical assistance, showing the SDS of this product. Do not induce vomiting, because its expulsion from the stomach can be hazardous to the mucus of the main digestive tract, and its inhalation, to the respiratory system. Rinse out the mouth and throat, as they may have been affected during ingestion. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

Carbon dioxide extinguisher (BC), Dry Chemical Powder (ABC) Fire Extinguisher, Water Mist Extinguisher (AC), Foam extinguisher (AB)

Unsuitable extinguishing media:

Water jet

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and Self Contained Breathing Apparatus. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

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SECTION 5: FIRE-FIGHTING MEASURES (continued)

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

For accidental releases in excess of reportables quantities (RQ) (Table 302.4), refer to 40 CFR 302 for detailed instructions concerning reporting requirements and notify the National Response Center (800) 424-8802.

Prevent the entrance of product in drains, sewers or watercourses. Absorb the spill using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. Collect the product in appropriate containers and manage it according to current legislation.

Spillages in water or sea:

Small spillages:

Contain spillage using barriers or similar equipment. Use suitable absorbents for collection and treat the waste in accordance with current regulations.

Large spillages:

If possible, contain spillage in open water using barriers or similar equipment. If this is not possible, try to control its spread and collect the product with suitable mechanical means. Always consult experts before using dispersants and make sure you have the necessary approvals if they are to be used. Treat the waste according to current regulations.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Specific storage requirements

Minimum Temp.: 41 ºF

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SECTION 7: HANDLING AND STORAGE (continued)

Maximum Temp.: 86 ºF

NFPA 30: IIIB

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be assessed in the workplace:

CALIFORNIA- TABLE AC-1 PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS:

Identification	Occupational exposure limits		
m-phenylenebis(methylamine)	PEL		0.1 mg/m³
CAS: 1477-55-0	STEL		

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

Always provide effective general and, when necessary, local exhaust ventilation to maintain the ambient workplace atmosphere below the exposure limits.. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,…) consult the information leaflet provided by the manufacturer. For additional information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

Pictogram	PPE	Remarks
	Filter mask for gases and vapours (Filter type: ABEK)	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer´s use limitations and OSHA standard 1910.134 (29CFR)
	Continuous flow compressed air line breathing device (Filter type: ABEK)	Replace when an increase in resistence to breathing is observed and/or a smell or taste of the contaminant is detected.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
	Chemical protective gloves (Material: Nitrile, Breakthrough time: 10 - 30 min, Thickness: 0.12 mm)	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Eye and face protection

Pictogram	PPE	Remarks
	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

E.- Bodily protection

Pictogram	PPE	Remarks
	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.
	Work clothing	Replace before any evidence of deterioration.
	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer´s use limitations and OSHA standard 1910.136 (29CFR)

F.- Additional emergency measures

It is advised to implement additional emergency equipments in workplaces that are particularly exposed to the product or in situations where risk assessments highlight the necessity of such equipments.

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

To comply with environmental protection regulations, it is recommended to prevent any spillage of the product and its container. For more detailed information, please refer to subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Fluid
Color:	Amber
Odor:	Aminic
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	>212 ºF
Vapour pressure at 68 ºF:	Non-applicable *
Vapour pressure at 122 ºF:	Non-applicable *
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	Non-applicable *
Relative density at 68 ºF:	0.97 - 1.07
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	Non-applicable *

*Non-applicable due to the nature of the product, not providing information property of its hazards.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Immiscible
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Flammability:	
Flash Point:	>234 ºF
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	689 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable *

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	Non-applicable *
Refraction index:	Non-applicable *

*Non-applicable due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Precaution	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

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SECTION 10: STABILITY AND REACTIVITY (continued)

Contains substances which require external energy for spontaneous decomposition. Form explosive peroxides when distilled, evaporated or otherwise concentrated.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- Corrosivity/Irritability: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Corrosive to the respiratory tract

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.
- Contact with the eyes: Produces serious eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
  IARC: Non-applicable
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Serious health effects in the case of prolonged consumption, including death, serious functional disorders or morphological changes of toxicological importance.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Other information:

Note: Route of exposure for acute inhalation toxicity is for Dusts, mists and Aerosol:

Product-specific toxicological information:

Acute toxicity	Genus

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

LD50 oral	1032 mg/kg	
LD50 dermal	>5000 mg/kg	

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
benzyl alcohol CAS: 100-51-6	LD50 oral	1620 mg/kg	
	LD50 dermal	2500 mg/kg	
	LC50 inhalation mist	3.3 mg/L	Rat
m-phenylenebis(methylamine) CAS: 1477-55-0	LD50 oral	930 mg/kg	Rat
	LD50 dermal		
	LC50 inhalation vapour	1.34 mg/L (4 h)	Rat
	LC50 inhalation mist	1.34 mg/L	Rat
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine CAS: 25513-64-8	LD50 oral	910 mg/kg	Rat
	LD50 dermal		
	LC50 inhalation		
2,4,6-tris(dimethylaminomethyl)phenol CAS: 90-72-2	LD50 oral	2169 mg/kg	Rat
	LD50 dermal		
	LC50 inhalation		

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine CAS: 25513-64-8	LC50	Non-applicable		
	EC50	Non-applicable		
	EC50	29.5 mg/L (72 h)	Scenedesmus subspicatus	Algae
benzyl alcohol CAS: 100-51-6	LC50	646 mg/L (48 h)	Leuciscus idus	Fish
	EC50	400 mg/L (24 h)	Daphnia magna	Crustacean
	EC50	79 mg/L (3 h)	Scenedesmus subspicatus	Algae
Formaldehyde polymer with 1,3-benzenedimethanamine and phenol CAS: 57214-10-5	LC50	>0.1 - 1 mg/L (96 h)		Fish
	EC50	>0.1 - 1 mg/L (48 h)		Crustacean
	EC50	>0.1 - 1 mg/L (72 h)		Algae
m-phenylenebis(methylamine) CAS: 1477-55-0	LC50	88 mg/L (96 h)	Oryzias latipes	Fish
	EC50	15 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	20 mg/L (72 h)	Selenastrum capricornutum	Algae
4,4'Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3epoxypropane , reaction products with ethylene diamine CAS: 72480-18-3	LC50	>0.1 - 1 mg/L (96 h)		Fish
	EC50	>0.1 - 1 mg/L (48 h)		Crustacean
	EC50	>0.1 - 1 mg/L (72 h)		Algae
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) CAS: 104-15-4	LC50	60 mg/L (96 h)	Oncorhynchus mykiss	Fish
	EC50	Non-applicable		
	EC50	245 mg/L (24 h)	Chlorella vulgaris	Algae
Amines, N-tallow alkyltrimethylenedi- CAS: 61791-55-7	LC50	>0.01 - 0.1 mg/L (96 h)		Fish
	EC50	>0.01 - 0.1 mg/L (48 h)		Crustacean
	EC50	>0.01 - 0.1 mg/L (72 h)		Algae

Chronic toxicity:

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SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Concentration		Species	Genus
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	NOEC	10.9 mg/L	Danio rerio	Fish
CAS: 25513-64-8	NOEC	1.02 mg/L	Daphnia magna	Crustacean
benzyl alcohol	NOEC	48.897 mg/L	N/A	Fish
CAS: 100-51-6	NOEC	51 mg/L	Daphnia magna	Crustacean
m-phenylenebis(methylamine)	NOEC	Non-applicable		
CAS: 1477-55-0	NOEC	4.7 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability		Biodegradability	
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	BOD5	Non-applicable	Concentration	10 mg/L
CAS: 25513-64-8	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	7 %
benzyl alcohol	BOD5	Non-applicable	Concentration	100 mg/L
CAS: 100-51-6	COD	Non-applicable	Period	14 days
	BOD5/COD	Non-applicable	% Biodegradable	94 %
m-phenylenebis(methylamine)	BOD5	Non-applicable	Concentration	14 mg/L
CAS: 1477-55-0	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	49 %
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	BOD5	Non-applicable	Concentration	100 mg/L
CAS: 104-15-4	COD	Non-applicable	Period	21 days
	BOD5/COD	Non-applicable	% Biodegradable	93 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential	
benzyl alcohol	BCF	0
CAS: 100-51-6	Pow Log	1.1
	Potential	Low
m-phenylenebis(methylamine)	BCF	3
CAS: 1477-55-0	Pow Log	0.18
	Potential	Low
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	BCF	0.2
CAS: 104-15-4	Pow Log	-0.62
	Potential	Low
2,4,6-tris(dimethylaminomethyl)phenol	BCF	
CAS: 90-72-2	Pow Log	0.22
	Potential	

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
benzyl alcohol	Koc	Non-applicable	Henry	Non-applicable
CAS: 100-51-6	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	3.679E-2 N/m (77 ºF)	Moist soil	Non-applicable
m-phenylenebis(methylamine)	Koc	1300	Henry	Non-applicable
CAS: 1477-55-0	Conclusion	Low	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

The next characteristic per RCRA could apply to the unused product if it becomes a waste material: Corrosivity. The next EPA hazardous waste number could apply: D002.
IT IS THE RESPONSIBILITY OF THE WASTE GENERATOR TO EVALUATE WHETHER HIS WASTES ARE HAZARDOUS BY CHARACTERISTICS OR LISTING.

Waste management (disposal and evaluation):

Follow RCRA framework and EPA regulation for to ensure that hazardous waste is managed safely and properly.Waste should not be disposed of to drains. Remind, It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing.See section 6 for further information about Accidental release measures.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Solid Wastes - Part 239 through 282.
State regulatory requirements for generators may be more stringent than those in the federal program. Be sure to check the state´s policies.

SECTION 14: TRANSPORT INFORMATION

Other information:

Labelling and packaging requirements may vary with pack and load size. Please refer to the current transport regulations.

Transport of dangerous goods by land:

With regard to 49 CFR on the Transport of Dangerous Goods:

14.1	**UN number:**	UN2735
14.2	**UN proper shipping name:**	AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3epoxypropane , reaction products with ethylene diamine)
14.3	**Transport hazard class(es):**	8
	Labels:	8
14.4	**Packing group, if applicable:**	II
14.5	**Marine pollutant:**	Yes
14.6	**Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**	
	Physico-Chemical properties:	see section 9
	Limited quantities:	1 L
	Under 49 CFR 171.4, Except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars, and aircraft	
14.7	**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):**	Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 41-22:

- CONTINUED ON NEXT PAGE -

SECTION 14: TRANSPORT INFORMATION (continued)

14.1	**UN number:**	UN2735
14.2	**UN proper shipping name:**	AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3epoxypropane , reaction products with ethylene diamine)
14.3	**Transport hazard class(es):**	8
	Labels:	8
14.4	**Packing group, if applicable:**	II
14.5	**Marine pollutant:**	Yes
14.6	**Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**	
	Special regulations:	274
	EmS Codes:	F-A, S-B
	Physico-Chemical properties:	see section 9
	Limited quantities:	1 L
	Segregation group:	SGG18
14.7	**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):**	Non-applicable

Transport of dangerous goods by air:

With regard to IATA/ICAO 2025:

14.1	**UN number:**	UN2735
14.2	**UN proper shipping name:**	AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3epoxypropane , reaction products with ethylene diamine)
14.3	**Transport hazard class(es):**	8
	Labels:	8
14.4	**Packing group, if applicable:**	II
14.5	**Marine pollutant:**	Yes
14.6	**Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**	
	Physico-Chemical properties:	see section 9
14.7	**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):**	Non-applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

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SECTION 15: REGULATORY INFORMATION (continued)

- CALIFORNIA LABOR CODE - The Hazardous Substances List: *m-phenylenebis(methylamine) (1477-55-0)* ; *2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)*
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Birth defects or other reproductive harm: Non-applicable
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Cancer: Non-applicable
- CANADA-Domestic Substances List (DSL): *2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine (25513-64-8)* ; *benzyl alcohol (100-51-6)* ; *m-phenylenebis(methylamine) (1477-55-0)* ; *p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) (104-15-4)* ; *2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)* ; *Amines, N-tallow alkyltrimethylenedi- (61791-55-7)*
- CANADA-Non-Domestic Substances List (NDSL): Non-applicable
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: Non-applicable
- Hazardous Air Pollutants (Clean Air Act): Non-applicable
- Massachusetts RTK - Substance List: *benzyl alcohol (100-51-6)* ; *m-phenylenebis(methylamine) (1477-55-0)* ; *p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) (104-15-4)*
- Minnesota - Hazardous substances ERTK: *m-phenylenebis(methylamine) (1477-55-0)*
- New Jersey Worker and Community Right-to-Know Act: *m-phenylenebis(methylamine) (1477-55-0)* ; *p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) (104-15-4)*
- New York RTK - Substance list: *m-phenylenebis(methylamine) (1477-55-0)*
- NTP (National Toxicology Program): Non-applicable
- OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
- Pennsylvania Worker and Community Right-to-Know Law: *benzyl alcohol (100-51-6)* ; *m-phenylenebis(methylamine) (1477-55-0)* ; *p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) (104-15-4)*
- Protective Action Criteria (PAC) with AEGLs, ERPGs, & TEELs: *benzyl alcohol (100-51-6)* ; *2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)*
- Rhode Island - Hazardous substances RTK: Non-applicable
- SB-258 Cleaning Product Right to Know Act : *benzyl alcohol (100-51-6)*
- The Toxic Substances Control Act (TSCA) : *2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine (25513-64-8)* ; *benzyl alcohol (100-51-6)* ; *m-phenylenebis(methylamine) (1477-55-0)* ; *p-toluenesulphonic acid (containing a maximum of 5 % H2SO4) (104-15-4)* ; *2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)* ; *Amines, N-tallow alkyltrimethylenedi- (61791-55-7)*
- Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information provided in this safety data sheet as a foundation for conducting workplace-specific risk assessments. These assessments will help establish the appropriate risk prevention measures for handling, using, storing, and disposing of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks.:

Section: 1, 2, 3, 5, 8, 11, 15, 16

Texts of the legislative phrases mentioned in section 2:

H318: Causes serious eye damage.
H317: May cause an allergic skin reaction.
H372: Causes damage to organs through prolonged or repeated exposure.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.

Advice related to training:

According to 29 CFR 1910. 1200, training on chemical hazards is necessary for employees using this product. This training will facilitate their understanding and interpretation of the safety data sheet, as well as the product label.

Principal bibliographical sources:

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SECTION 16: OTHER INFORMATION (continued)

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

Date of compilation: 4/2/2024
Revised: 4/7/2025

END OF SAFETY DATA SHEET