1. Product and company identification

Product identifier

Trade name: TMSFR 5100A

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

General use: Epoxy resin-coating agent.
Reserved for industrial and professional use.

Details of the supplier of the safety data sheet

Company name:

Airtech International, Inc.
5700 Skylab Road
Huntington Beach, CA 92647
E-mail: airtech@airtechintl.com
Website: www.airtechonline.com
Telephone: +1 714.899.8100
Dept. responsible for information:
Telephone: +1 714.899.8100
E-mail: airtech@airtechintl.com

Airtech Europe Sarl
Zone industrielle Haneboesch
L–4562 Differdange
Luxembourg
Website: www.airtech.lu
Telephone: +352 582.282
Dept. responsible for information:
Telephone: +352 582.282
E-mail: sales@airtech.lu

Tygavac Advanced Materials Ltd.
The Causeway
Broadway Business Park
Chadderton, Oldham
OL9 9XD United Kingdom
Website: www.tygavac.co.uk
Telephone: +44 161.947.1610
Dept. responsible for information:
Telephone: +44 161.947.1610
E-mail: sales@tygavac.co.uk

Airtech Asia Ltd.
No. 161 of Anyuan Rd
Chagugang County
Wuqing District
301721, Tianjin, P.R. China
Website: www.airtech.asia
Telephone: +86 22 8862 9800
Telefax:: +86 22 8862 9900
Dept. responsible for information:
Telephone: +86 22 8862 9800
E-mail: airtech.asia@airtechasia.com.cn

Emergency phone number

CHEMTREC EMERGENCY PHONE:
Within USA/Canada: 1-(800)424-9300
International: +1 703-741-5970

2. Hazards identification

Emergency overview

Appearance: Form: pasty
Color: black

Odor: characteristic

Classification: Skin Irritation - Category 2; Eye Irritation - Category 2A; Sensitization - skin - Category 1; Aquatic toxicity - chronic - Category 2;

Hazard symbols:

Signal word: **Warning**

Hazard statements:

Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Toxic to aquatic life with long lasting effects.

Precautionary statements:

Avoid breathing vapors/spray.
Wash hands and face thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection.
IF ON SKIN: Wash with plenty of water/soap.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see ' First aid ' on this label).
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Collect spillage.
Dispose of contents/container to hazardous or special waste collection point.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Thermal decomposition can lead to the escape of irritating gases and vapors. May cause respiratory irritation. May be harmful if swallowed. Special danger of slipping by leaking/spilling product.

Contains materials regulated as dust hazards, dispersed in a non-hazardous form. If dust is recreated, appropriate respiratory and/or explosion precautions must still be used.
see section 11: Toxicological information

3. Composition / Information on ingredients

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 25085-99-8	Bisphenol A epoxy resin	< 60 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 25068-38-6	Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight <=700)	< 30 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 2425-79-8	1,4-bis(2,3-Epoxypropoxy)butane	< 10 %	Acute Toxicity - dermal - Category 4. Acute Toxicity - inhalative - Category 4. Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 3.

4. First aid measures

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing. If breathing has stopped, give artificial respiration immediately. In case of breathing difficulties administer oxygen. Seek medical attention.

Following skin contact: After contact with skin, wash immediately with soap and plenty of water. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.
Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Immediately get medical attention. Do not induce vomiting without medical assistance.
If person is clearly conscious, have them drink two glasses of water to dilute ingested material.
Never give an unconscious person anything through the mouth.

Most important symptoms/effects, acute and delayed

In case of inhalation:
Thermal decomposition can lead to the escape of irritating gases and vapors. May cause respiratory irritation.
In case of ingestion: May be harmful if swallowed.
After contact with skin: Sensitisation, irritation, redness, pain,
After eye contact: Irritation, redness, pain.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:
No data available

Auto-ignition temperature:
No data available

Suitable extinguishing media:
Water spray jet, foam, dry chemical powder, carbon dioxide.

Extinguishing media which must not be used for safety reasons:
Full water jet.

Specific hazards arising from the chemical

This material is combustible, but will not ignite readily. Emits toxic fumes under fire conditions.
In case of fire may be liberated: Aldehyde, acids, phenols, carbon monoxide and carbon dioxide.
Formation of numerous unknown compounds is possible.

Protective equipment and precautions for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Seal off endangered area. Heating causes rise in pressure with risk of bursting. Cool endangered containers with water spray and, if possible, remove from danger zone. Fight fire from a safe distance. Stay upwind/keep distance from source. Use a water fog to control vapors. Do not allow fire water to penetrate into surface or ground water.

6. Accidental release measures

Personal precautions: Avoid the formation of aerosol/vapors. Avoid inhalation and contact with skin and eyes. Respiratory protection in case of aerosol or vapor formation. Wear appropriate protective equipment. Keep unprotected people away. Ensure adequate ventilation, especially in confined areas.

Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains. If necessary notify appropriate authorities.

Methods for clean-up: Dam spills. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal. Wash spill area with hot water. Dispose of waste according to applicable legislation.

Additional information: Special danger of slipping by leaking/spilling product.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Avoid contact with skin, eyes, and clothing. Do not breathe vapor or spray. Use suitable personal protective equipment to protect skin and eyes. Take care when re-opening already used containers. Handle and open container with care. When using do not eat, drink or smoke. Wash hands before breaks and after work.

Precautions against fire and explosion:

Take standard precautions to prevent fire.

Storage

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place. Keep away from sources of ignition. Store in a dry place. Do not drop, drag or bang the container.

Hints on joint storage: Avoid contact with strong acids, oxidizing agents and alkalis. Keep away from food and drinks.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
14807-96-6	Talcum	USA: ACGIH: TWA	2 mg/m³ respirable fraction
		USA: NIOSH: TWA	2 mg/m³
		USA: OSHA: TWA	20 mppcf Containing less than 1% quartz
471-34-1	Calcium carbonate	USA: NIOSH: TWA	10 mg/m³ (inhalable fraction)
		USA: NIOSH: TWA	5 mg/m³ (respirable fraction)
		USA: OSHA: TWA	15 mg/m³ (inhalable fraction)
		USA: OSHA: TWA	5 mg/m³ (respirable fraction)
1333-86-4	Carbon	USA: ACGIH: TWA	3 mg/m³ (inhalable fraction)
		USA: NIOSH: TWA	0.1 mg PAHs/m³ (Carbon black in presence of polycyclic aromatic hydrocarbons (PAHs))
		USA: NIOSH: TWA	3.5 mg/m³
		USA: OSHA: TWA	3.5 mg/m³

Additional information: Contains materials regulated as dust hazards, dispersed in a non-hazardous form. If dust is recreated, appropriate respiratory and/or explosion precautions must still be used.

Engineering controls

Provide adequate ventilation, and local exhaust as needed.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear closed work clothing.

Protective gloves according to EN 374.
Glove material: Nitrile rubber or neoprene.
Layer thickness (recommended): >0.5 mm.
Breakthrough time: not tested.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: When vapors form, use respiratory protection.
Recommended: Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.
The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

General hygiene considerations:

Avoid contact with skin, eyes, and clothing. Take off contaminated clothing and wash it before reuse. Do not breathe vapor or spray. Have eye wash bottle or eye rinse ready at work place. When using do not eat, drink or smoke. Wash hands before breaks and after work.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Form: pasty Color: black
Odor:	characteristic
Odor threshold:	No data available
pH value:	neutral
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	No data available
Evaporation rate:	No data available
Flammability:	This material is combustible, but will not ignite readily.
Explosion limits:	No data available
Vapor pressure:	negligible
Vapor density:	No data available
Density:	1.43 g/cm³
Water solubility:	negligible
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Viscosity, dynamic:	at 68 °F: 8500 - 10500 mPa*s

10. Stability and reactivity

Reactivity: Refer to section: Possibility of hazardous reactions.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions
Exothermic reactions with oxidizing agents, strong bases, strong acids.

Conditions to avoid: Keep away from heat.

Incompatible materials: Strong acids, bases, oxidizing agents.

Hazardous decomposition products:
Emits toxic fumes under fire conditions.
In case of fire may be liberated: aldehyde, acids, phenols, carbon monoxide and carbon dioxide.
Formation of numerous unknown compounds is possible.

Thermal decomposition: No data available

11. Toxicological information

Toxicological tests

Toxicological effects:

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation.

The product has not been tested. The statement is derived from the properties of the single components.

Serious eye damage/irritation: Eye Irritation -
Category 2A = Causes serious eye irritation.

The product has not been tested. The statement is derived from the properties of the single components.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Sensitization - skin - Category 1 = May cause an allergic skin reaction.

The product has not been tested. The statement is derived from the properties of the single components.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Other information:

Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.

IARC rating:

Contains materials assigned to Group 3 and Group 2B.
Under HCS 2012, §1910.1200(i) the precise composition of the product is withheld as trade secret. A more complete disclosure can be provided to a health, or safety professional when necessary.

Symptoms

In case of inhalation:
Thermal decomposition can lead to the escape of irritating gases and vapors. May cause respiratory irritation.
In case of ingestion: May be harmful if swallowed.
After contact with skin: Sensitisation, irritation, redness, pain,
After eye contact: Irritation, redness, pain.

12. Ecological information

Ecotoxicity

Aquatic toxicity:

Toxic to aquatic life with long lasting effects.
The product has not been tested. The statement is derived from the properties of the single components.

Mobility in soil

No data available

Persistence and degradability

Further details: No data available

Additional ecological information

General information: Do not allow to penetrate into soil, waterbodies or drains.

13. Disposal considerations

Product

Recommendation: Incinerate according to applicable local, state and federal regulations.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled. Do not remove label until container is thoroughly cleaned.

Additional information

Do not allow to penetrate into soil, waterbodies or drains.

14. Transport information

USA: Department of Transportation (DOT)

Identification number:	UN3077
Proper shipping name:	UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
Hazard class or Division:	9
Packing Group:	III
Labels:	9
Special provisions:	8, 146, 335, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33
Packaging – Exceptions:	155
Packaging – Non-bulk:	213
Packaging – Bulk:	240
Quantity limitations – Passenger aircraft / rail:	No limit
Quantity limitations – Cargo only:	No limit
Vessel stowage – Location:	A

Sea transport (IMDG)

UN number:	UN 3077
Proper shipping name:	UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Bisphenol epoxy resins)
Class or division, Subsidary risk:	Class 9, Subrisk -
Packing Group:	III
EmS:	F-A, S-F
Special provisions:	274, 335, 966, 967, 969
Limited quantities:	5 kg
Excepted quantities:	E1
Contaminated packaging - Instructions:	P002, LP02
Contaminated packaging - Provisions:	PP12
IBC - Instructions:	IBC08
IBC - Provisions:	B3
Tank instructions - IMO:	-
Tank instructions - UN:	T1, BK2, BK2, BK3
Tank instructions - Provisions:	TP33
Stowage and handling:	Category A. SW23
Properties and observations:	-
Marine pollutant:	yes
Segregation group:	none

Air transport (IATA)

UN/ID number:	UN 3077
Proper shipping name:	UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Bisphenol epoxy resins)
Class or division, Subsidary risk:	Class 9
Packing Group:	III
Hazard label:	Miscellaneous
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y956 - Max. Net Qty/Pkg. 30 kg G
Passenger and Cargo Aircraft:	Pack.Instr. 956 - Max. Net Qty/Pkg. 400 kg
Cargo Aircraft only:	Pack.Instr. 956 - Max. Net Qty/Pkg. 400 kg
Special provisions:	A97 A158 A179 A197
Emergency Response Guide-Code (ERG):	9L

15. Regulatory information

National regulations - U.S. Federal Regulations

Product: All ingredients of this product are listed on the TSCA inventory.

Talcum: Carcinogen Status:
IARC Rating: Group 3
OSHA Carcinogen: not listed
NTP Rating: not listed
NIOSH Recommendations:
Occupational Health Guideline: 0584

1,4-bis(2,3-Epoxypropoxy)butane: TSCA: listed

Carbon: Carcinogen Status:
IARC Rating: Group 2B
OSHA Carcinogen: not listed
NTP Rating: not listed
NIOSH Recommendations:
Occupational Health Guideline: 0102

Alkenes, C>10: EPA-List of inert pesticide ingredients (4B): listed

National regulations - U.S. State Regulations

Talcum: California Proposition 65 code: not listed
Massachusetts Haz. Substance codes: 2,4 F5
Minnesota Haz. Substance:
Codes: AO - Ratings: --
Pennsylvania Haz. Substance code: -
Washington Air Contaminant:
TWA: 2mg
Wisconsin Hazardous Air Contaminant List (Appears on Table): A

Carbon: California Proposition 65: cancer

National regulations - Great Britain

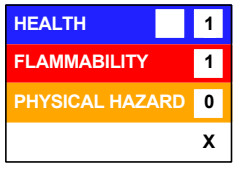
Hazchem-Code: 2Z

16. Other information

Text for labeling: Contains < 60 % Bisphenol A epoxy resin, < 30 % Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight <=700), < 10 % 1,4-bis(2,3-Epoxypropoxy)butane. Safety data sheet available on request.

Hazard rating systems: NFPA Hazard Rating:
Health: 1 (Slight)
Fire: 1 (Slight)
Reactivity: 0 (Minimal)

HMIS Version III Rating:
Health: 1 (Slight)
Flammability: 1 (Slight)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor



Reason of change: Changes in section 1: Company/undertaking identification

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

This data sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, and which additional precautions may be necessary. All health and safety information contained in this data sheet should be provided to your employees and customers. It is your responsibility to develop appropriate workplace instructions and training programs for employees.

As the conditions and methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. All statements or suggestions are made without warranty, expressed or implied, regarding accuracy of information, the hazards connected with the use of the product or the results to be obtained from the use thereof.

1. Product and company identification

Product identifier

Trade name: TMSFHR 5100B

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

General use: Curing agent.
Reserved for industrial and professional use.

Details of the supplier of the safety data sheet

Company name:

Airtech International, Inc.
5700 Skylab Road
Huntington Beach, CA 92647
E-mail: airtech@airtechintl.com
Website: www.airtechonline.com
Telephone: +1 714.899.8100
Dept. responsible for information:
Telephone: +1 714.899.8100
E-mail: airtech@airtechintl.com

Airtech Europe Sarl
Zone industrielle Haneboesch
L–4562 Differdange
Luxembourg
Website: www.airtech.lu
Telephone: +352 582.282
Dept. responsible for information:
Telephone: +352 582.282
E-mail: sales@airtech.lu

Tygavac Advanced Materials Ltd.
The Causeway
Broadway Business Park
Chadderton, Oldham
OL9 9XD United Kingdom
Website: www.tygavac.co.uk
Telephone: +44 161.947.1610
Dept. responsible for information:
Telephone: +44 161.947.1610
E-mail: sales@tygavac.co.uk

Airtech Asia Ltd.
No. 161 of Anyuan Rd
Chagugang County
Wuqing District
301721, Tianjin, P.R. China
Website: www.airtech.asia
Telephone: +86 22 8862 9800
Telefax:: +86 22 8862 9900
Dept. responsible for information:
Telephone: +86 22 8862 9800
E-mail: airtech.asia@airtechasia.com.cn

Emergency phone number

CHEMTREC EMERGENCY PHONE:
Within USA/Canada: 1-(800)424-9300
International: +1 703-741-5970

2. Hazards identification

Emergency overview

Appearance: Form: liquid
Color: amber

Odor: amine odor

Classification: Acute Toxicity - oral - Category 4; Acute Toxicity - dermal - Category 4;
Skin Corrosion - Category 1B; Sensitization - skin - Category 1;
Specific Target Organ Toxicity (Repeated Exposure) - Category 2;
Aquatic toxicity - acute - Category 1; Aquatic toxicity - chronic - Category 1;

Hazard symbols:

Signal word: **Danger**

Hazard statements:

Harmful if swallowed.
Harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Do not breathe vapors.
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of water/soap.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/or shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Specific treatment (see ' First aid ' on this label).
Specific measures (see ' First aid ' on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Collect spillage.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

May be harmful if inhaled. Special danger of slipping by leaking/spilling product.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization:

A mixture of amines.

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 68479-98-1	Diethylmethylbenzenediamine	< 90 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1.
CAS 2855-13-2	3-Aminomethyl-3,5,5-trimethylcyclohexylamine	< 25 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Skin Corrosion - Category 1B. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 3.
CAS 1477-55-0	m-Phenylenebis(methylamine)	< 25 %	Acute Toxicity - oral - Category 4. Acute Toxicity - inhalative - Category 4. Skin Corrosion - Category 1B. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 3.
CAS 112-24-3	Triethylentetramine	< 25 %	Acute Toxicity - dermal - Category 4. Skin Corrosion - Category 1B. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 3.

4. First aid measures

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing. If breathing has stopped, give artificial respiration immediately. In case of breathing difficulties administer oxygen. Seek medical attention.

Following skin contact: Immediately get medical attention. After contact with skin, wash immediately with soap and plenty of water. Take off immediately all contaminated clothing. Cover with sterile dressing material to protect against infection.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Immediately get medical attention. Never give anything by mouth to an unconscious person. Rinse mouth immediately and drink plenty of water. Do not induce vomiting without medical assistance.

Most important symptoms/effects, acute and delayed

Harmful in contact with skin and if swallowed. May be harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause damage to organs through prolonged or repeated exposure.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

249.8 °F

Auto-ignition temperature:

No data available

Suitable extinguishing media:

Water spray jet, dry chemical powder, foam, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

Full water jet.

Specific hazards arising from the chemical

This material is combustible, but will not ignite readily.
May form dangerous gases and vapours in case of fire.
Formation of numerous unknown compounds is possible.
In case of fire may be liberated: ammonia, nitrogen oxides (NOx), carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Seal off endangered area. Heating causes rise in pressure with risk of bursting. Cool endangered containers with water spray and, if possible, remove from danger zone. Fight fire from a safe distance. Stay upwind/keep distance from source. Use a water fog to control vapors. Do not allow fire water to penetrate into surface or ground water.

6. Accidental release measures

Personal precautions: Avoid contact with the substance. Wear appropriate protective equipment. Avoid the formation of aerosol/vapors. Do not breathe vapor/aerosol/fog. Respiratory protection in case of aerosol or vapor formation. Ensure adequate ventilation, especially in confined areas. Keep unprotected people away.

Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains.
In case of release, notify competent authorities.

Methods for clean-up: Dam spills. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal. Final cleaning. Dispose of waste according to applicable legislation.

Additional information: Special danger of slipping by leaking/spilling product.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.
Avoid contact with skin, eyes, and clothing. Wear appropriate protective equipment. Avoid the formation of aerosol/vapors. Do not breathe vapor/aerosol/fog.
Respiratory protection in case of aerosol or vapor formation. When using do not eat, drink or smoke. After work, wash hands and face.
When using do not eat, drink or smoke.

Precautions against fire and explosion:

Take standard precautions to prevent fire. Protect from excessive heat. Avoid open flames.

Storage

Requirements for storerooms and containers:

Store container tightly closed in a dry and cool place. Keep container in a well-ventilated place. Refrigerated storage is recommended to maintain product quality. Do not drop, drag or bang the container. Keep away from incompatible materials.

Hints on joint storage: Incompatible materials: Nitrous acid, Sodium hypochlorite, peroxides, acrylate, strong acids, strong oxidizing agents, epoxides, aldehydes, ketone, halogenated organic compounds. Keep away from food and drinks.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
1477-55-0	m-Phenylenebis (methylamine)	USA: ACGIH: Ceiling	0.1 mg/m³ (may be absorbed through the skin)
		USA: NIOSH: Ceiling	0.1 mg/m³ (may be absorbed through the skin)

Engineering controls

Provide adequate ventilation, and local exhaust as needed. Recommended: Execute works under fume hood.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Protective work clothing, chemical resistant safety shoes.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: nitrile rubber or neoprene.
Layer thickness (recommended): >0.5 mm.
Breakthrough time: not tested.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: When vapors form, use respiratory protection.
Recommended: Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

General hygiene considerations:

Avoid contact with skin, eyes, and clothing. Change contaminated clothing.
Do not breathe vapor/aerosol/fog. Work place should be equipped with a shower and an eye rinsing apparatus.
After work, wash hands and face. When using do not eat, drink or smoke.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Form: liquid Color: amber
Odor:	amine odor
Odor threshold:	No data available
pH value:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	249.8 °F
Evaporation rate:	No data available
Flammability:	This material is combustible, but will not ignite readily.
Explosion limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Density:	No data available
Solubility:	No data available
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Additional information:	No data available

10. Stability and reactivity

Reactivity: Refer to section: Possibility of hazardous reactions.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions
Exothermic reactions with incompatible materials.

Conditions to avoid: Protect from excessive heat. Avoid the formation of aerosol/vapors.

Incompatible materials: Nitrous acid, Sodium hypochlorite, peroxides, acrylate, strong acids, strong oxidizing agents, epoxides, aldehydes, ketone, halogenated organic compounds

Hazardous decomposition products:
In case of fire may be liberated: ammonia, nitrogen oxides (NOx), carbon monoxide and carbon dioxide. Formation of numerous unknown compounds is possible.

Thermal decomposition: No data available

11. Toxicological information

Toxicological tests

Toxicological effects:

Acute toxicity (oral): Acute Toxicity - oral - Category 4 = Harmful if swallowed.
The product has not been tested. The statement is derived from the properties of the single components.
ATEmix (calculated): 300< ATE<= 2000.

Acute toxicity (dermal): Acute Toxicity - dermal -
Category 4 = Harmful in contact with skin.
The product has not been tested. The statement is derived from the properties of the single components.
ATEmix (calculated): 1000< ATE<= 2000.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.
The product has not been tested. The statement is derived from the properties of the single components.
ATEmix (calculated): ATE> 5.

Skin corrosion/irritation: Skin Corrosion -
Category 1B = Causes severe skin burns and eye damage.
The product has not been tested. The statement is derived from the properties of the single components.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Sensitization - skin - Category 1 = May cause an allergic skin reaction.
The product has not been tested. The statement is derived from the properties of the single components.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) -
Category 2 = May cause damage to organs through prolonged or repeated exposure.

The product has not been tested. The statement is derived from the properties of the single components.
Chronic toxicity: Possible danger of damage to liver and kidneys.

Aspiration hazard: Lack of data.

Other information:

Amines (vapors): May cause damage to liver and kidneys through prolonged or repeated exposure. Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.

Symptoms

In case of inhalation: May be harmful if inhaled.
Following symptoms can occur depending on degree of seriousness: Sore throat, headache, fatigue, dizziness, cough, nausea, vomiting.
In case of ingestion: Burns in the mouth, pharynx, oesophagus, and gastrointestinal tract.
Other symptoms: Danger of stomach perforation. Abdominal pain, nausea, sore throat, vomiting, thirst and coma.
After contact with skin: Burns, causes poorly healing wounds.
After eye contact: Danger of loss of sight, burns.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Very toxic to aquatic life with long lasting effects.

Mobility in soil

No data available

Persistence and degradability

Further details: No data available

Additional ecological information

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: Dispose of waste according to applicable legislation.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Do not remove label until container is thoroughly cleaned. Non-contaminated packages may be recycled.

14. Transport information

USA: Department of Transportation (DOT)

Identification number:	UN2735
Proper shipping name:	UN 2735, AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine, m-Phenylenebis(methylamine) and triethylentetramine)
Hazard class or Division:	8
Packing Group:	II
Labels:	8
Symbols:	G
Special provisions:	B2, IB2, T11, TP1, TP27
Packaging – Exceptions:	154
Packaging – Non-bulk:	202
Packaging – Bulk:	242
Quantity limitations – Passenger aircraft / rail:	1 L
Quantity limitations – Cargo only:	30 L
Vessel stowage – Location:	A
Vessel stowage – Other:	52

Sea transport (IMDG)

UN number:	UN 2735
Proper shipping name:	UN 2735, AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine, m-Phenylenebis(methylamine) and triethylentetramine)
Class or division, Subsidary risk:	Class 8, Subrisk -
Packing Group:	II
EmS:	F-A, S-B
Special provisions:	274
Limited quantities:	1 L
Excepted quantities:	E2
Contaminated packaging - Instructions:	P001
Contaminated packaging - Provisions:	-
IBC - Instructions:	IBC02
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T11
Tank instructions - Provisions:	TP1, TP27
Stowage and handling:	Category A.
Segregation:	SG35
Properties and observations:	Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. React violently with acids. Cause burns to skin, eyes and mucous membranes.
Marine pollutant:	yes
Segregation group:	18

Air transport (IATA)

UN/ID number:	UN 2735
Proper shipping name:	UN 2735, AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine, m-Phenylenebis(methylamine) and triethylentetramine)
Class or division, Subsidary risk:	Class 8
Packing Group:	II
Hazard label:	Corrosive
Excepted Quantity Code:	E2
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y840 - Max. Net Qty/Pkg. 0.5 L
Passenger and Cargo Aircraft:	Pack.Instr. 851 - Max. Net Qty/Pkg. 1 L
Cargo Aircraft only:	Pack.Instr. 855 - Max. Net Qty/Pkg. 30 L
Special provisions:	A3 A803
Emergency Response Guide-Code (ERG):	8L

15. Regulatory information

National regulations - U.S. Federal Regulations

Product:	All ingredients of this product are listed on the TSCA inventory.
m-Phenylenebis(methylamine):	NIOSH Recommendations: Occupational Health Guideline: 0671

National regulations - U.S. State Regulations

m-Phenylenebis(methylamine):	Idaho Air Pollutant List: listed Massachusetts Haz. Substance Codes: 4 Minnesota Haz. Substance: listed Pennsylvania Haz. Substance Code: - Washington Air Contaminant: listed
Triethylentetramine:	California Proposition 65 code: - Massachusetts Haz. Substance codes: 6 Pennsylvania Haz. Substance code: -

National regulations - Great Britain

Hazchem-Code: 2X

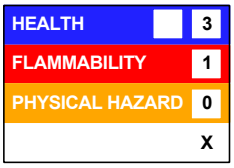
16. Other information

Text for labeling: Contains < 90 % Diethylmethylbenzenediamine, < 25 % 3-Aminomethyl-3,5,5-trimethylcyclohexylamine, < 25 % m-Phenylenebis(methylamine), < 25 % Triethylentetramine. Safety data sheet available on request.

Hazard rating systems:

NFPA Hazard Rating:
Health: 3 (Serious)
Fire: 1 (Slight)
Reactivity: 0 (Minimal)

HMIS Version III Rating:
Health: 3 (Serious)
Flammability: 1 (Slight)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor



Reason of change: Changes in section 1: Company/undertaking identification

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

This data sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, and which additional precautions may be necessary. All health and safety information contained in this data sheet should be provided to your employees and customers. It is your responsibility to develop appropriate workplace instructions and training programs for employees.

As the conditions and methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. All statements or suggestions are made without warranty, expressed or implied, regarding accuracy of information, the hazards connected with the use of the product or the results to be obtained from the use thereof.