

1. Product and company identification

Product identifier

Trade name: TMH 5001B

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.comAirtech Europe Sarl
Zone industrielle Haneboesch
L-4562 Differdange
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Website: www.airtech.lu
Telephone: +352 582.282
Dept. responsible for information:
Telephone: +352 582.282
E-mail: sales@airtech.luTygavac Advanced Materials Ltd.
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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.ukAirtech 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: like Ammonia
Classification: Acute Toxicity - oral - Category 4; Acute Toxicity - dermal - Category 4;
Skin Corrosion - Category 1A; 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

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

3. Composition / Information on ingredients

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 2855-13-2	3-Aminomethyl-3,5,5-trimethylcyclohexylamine	< 60 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Skin Corrosion - Category 1B. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 3.
CAS 68479-98-1	Diethylmethylbenzenediamine	< 60 %	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 1761-71-3	4,4'-Methylenebis (cyclohexylamine)	< 20 %	Acute Toxicity - oral - Category 4. Skin Corrosion - Category 1A. Sensitization - skin - Category 1. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - chronic - Category 2.
CAS 616-47-7	1-Methylimidazole	< 20 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Skin Corrosion - Category 1B.

4. First aid measures

General information:	First aider: Pay attention to self-protection!
In case of inhalation:	Provide fresh air. Put victim at rest. Immediately get medical attention.
Following skin contact:	Take off immediately all contaminated clothing. Remove residues with soap and water. Take off contaminated clothing and wash it before reuse. Cover with sterile dressing material to protect against infection. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.
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:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Immediately get medical attention.

Most important symptoms/effects, acute and delayed

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

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

> 230 °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 (NO_x), 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. Cool endangered containers with water spray and, if possible, remove from danger zone. Use a water fog to control vapors. Do not inhale explosion and combustion gases. 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. If necessary notify appropriate authorities.

Methods for clean-up:

Plug leak if safely possible. Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder. Store in special closed containers and dispose of according to ordinance.

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.

Precautions against fire and explosion:

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

Storage

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place. Keep container dry.

Keep only in original container. Keep away from heat sources, sparks and open flames.

Keep away from incompatible materials.

Hints on joint storage: Incompatible materials: Sodium hypochlorite, strong acids, strong oxidizing agents, peroxides.
Keep away from food and drinks.

8. Exposure controls / personal protection

Engineering controls

Provide adequate ventilation.

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: Wear suitable protective clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Glove material: Neoprene or rubber

Layer thickness (recommended): >0.5 mm.

Breakthrough time: not tested.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: Use a breathing protection against vapors/aerosol.

Use filter type A-P2 according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

On demand: Wear self-contained breathing apparatus.

General hygiene considerations:

Avoid contact with skin, eyes, and clothing. Take off contaminated clothing and wash it before reuse. 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:	like Ammonia
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:	> 230 °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: May be corrosive to metals.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions
Reacts violently with acids.

Conditions to avoid: Protect from excessive heat.

Incompatible materials: Sodium hypochlorite, strong acids, strong oxidizing agents, peroxides.

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

Thermal decomposition: No data available

11. Toxicological information

Toxicological tests

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Acute Toxicity - oral - Category 4 = Harmful if swallowed.
ATEmix (calculated): 300<ATE< 2000.

Acute toxicity (dermal): Acute Toxicity - dermal - Category 4 = Harmful in contact with skin.
ATEmix (calculated): 1000<ATE< 2000.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Skin Corrosion - Category 1A = Causes severe skin burns and eye damage.

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.

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.

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: Irritation, headache, dizziness, fatigue, nausea, vomiting.

In case of ingestion:

Burns in the mouth, pharynx, oesophagus, and gastrointestinal tract. Danger of stomach perforation.

Other symptoms: Risk of perforation, nausea, vomiting, sore throat, stomachache, 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: The product has not been tested. The statement is derived from the properties of the single components.

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: Incinerate as hazardous waste 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. 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.
(4,4'-Methylenebis(cyclohexylamine)
3-Aminomethyl-3,5,5-trimethylcyclohexylamine)
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.
(4,4'-Methylenebis(cyclohexylamine)
3-Aminomethyl-3,5,5-trimethylcyclohexylamine)
Class or division, Subsidiary 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.
 (4,4'-Methylenebis(cyclohexylamine)
 3-Aminomethyl-3,5,5-trimethylcyclohexylamine)
 Class or division, Subsidiary 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

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

National regulations - Great Britain

Hazchem-Code: 2X

16. Other information

Text for labeling: Contains < 60 % 3-Aminomethyl-3,5,5-trimethylcyclohexylamine, < 60 % Diethylmethylbenzenediamine, < 20 % 4,4'-Methylenebis(cyclohexylamine), < 20 % 1-Methylimidazole. 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) - Chronic effects
 Flammability: 1 (Slight)
 Physical Hazard: 0 (Minimal)
 Personal Protection: X = Consult your supervisor

HEALTH	*	3
FLAMMABILITY		1
PHYSICAL HAZARD		0
		X

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: TMSF 5001A

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

General use: Resin.
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
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E-mail: sales@tygavac.co.ukAirtech Asia Ltd.
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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: black
Odor: pleasant odor
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.
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/face 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

May be harmful if swallowed. May cause respiratory irritation. 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

Chemical characterization:

Mixture of the substances listed below with non-hazardous additions.

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 25085-99-8	Bisphenol A epoxy resin	< 70 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 28064-14-4	Bisphenol-F-epichlorhydrine resin	< 30 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 14808-60-7	Silicon dioxide (Quartz (SiO ₂))	< 25 %	not applicable
CAS 7782-42-5	Graphite	< 15 %	not applicable
CAS 71011-24-0	Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, chlorides, compds. with bentonite	< 5 %	not applicable
CAS 1333-86-4	Carbon	< 2 %	not applicable
CAS 15625-89-5	Trimethylolpropane triacrylate	< 1 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1.

4. First aid measures

- In case of inhalation: Provide fresh air. Put victim at rest and keep warm. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.
- Following skin contact: Take off immediately all contaminated clothing. Take off contaminated clothing and wash it before reuse. Thoroughly wash skin with soap and water. Consult a doctor if skin irritation persists.
- After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.
- After swallowing: Never give anything by mouth to an unconscious person. Rinse mouth immediately and drink plenty of water. Do not induce vomiting. Immediately get medical attention.

Most important symptoms/effects, acute and delayed

Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

> 348.8 °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: acids, aldehydes, phenol, 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. Cool endangered containers with water spray and, if possible, remove from danger zone. Use a water fog to control vapors. Do not inhale explosion and combustion gases. Do not allow fire water to penetrate into surface or ground water.

6. Accidental release measures

Personal precautions: Avoid contact with skin and eyes. Avoid the formation of aerosol. Do not breathe vapor or spray. Wear appropriate protective equipment. Keep unprotected people away. Provide adequate ventilation.

Environmental precautions:

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

Methods for clean-up:

Plug leak if safely possible. Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder. Store in special closed containers and dispose of according to ordinance. Final cleaning.

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. Avoid the formation of aerosol. Do not breathe vapor or spray. Wear appropriate protective equipment. Handle and open container with care. When using do not eat, drink or smoke. After work, wash hands and face.

Precautions against fire and explosion:

Take standard precautions to prevent fire. Protect from excessive heat. Keep away from sources of ignition - No smoking.

Storage

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place. Keep container dry.
Keep away from heat sources, sparks and open flames.
Store containers in upright position. Keep away from incompatible materials.

Hints on joint storage:

Incompatible materials: Sodium hypochlorite, strong acids, strong oxidizing agents, amines (aliphatic).

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
14808-60-7	Silicon dioxide (Quartz (SiO ₂))	USA: ACGIH: TWA	0.025 mg/m ³ (respirable fraction)
		USA: NIOSH: TWA	0.05 mg/m ³ (respirable fraction)
		USA: OSHA: TWA	10 mg/m ³ /% SiO ₂ + 2 (respirable fraction)
		USA: OSHA: TWA	250 mppcf/%SiO ₂ +5 (fine dust)
		USA: OSHA: TWA	30 mg/m ³ /% SiO ₂ + 2 (inhalable fraction)
7782-42-5	Graphite	USA: ACGIH: TWA	2 mg/m ³ (respirable fraction)
		USA: NIOSH: TWA	2.5 mg/m ³ (respirable fraction)
		USA: OSHA: TWA	15 mg/m ³ (inhalable fraction)
		USA: OSHA: TWA	15 mppcf
		USA: OSHA: TWA	5 mg/m ³ (respirable fraction)
1333-86-4	Carbon	USA: ACGIH: TWA	3 mg/m ³ (inhalable fraction)
		USA: NIOSH: TWA	0.1 mg PAHs/m ³ (Carbon black in presence of polycyclic aromatic hydrocarbons (PAHs))
		USA: NIOSH: TWA	3.5 mg/m ³
		USA: OSHA: TWA	3.5 mg/m ³
		USA: OSHA: TWA	3.5 mg/m ³

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 good ventilation and/or an exhaust system in the work area.
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 suitable protective clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Glove material: nitrile rubber or neoprene.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: Use a breathing protection against vapors/aerosol.

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. Take off contaminated clothing and wash it before reuse. Do not breathe vapor or spray. Eye wash facility must be provided. 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: liquid Color: black
Odor:	pleasant odor
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:	> 348.8 °F
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:	1.14 g/mL
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:	See section: Possibility of hazardous reactions
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions	No hazardous reaction when handled and stored according to provisions.
Conditions to avoid:	Protect from excessive heat.
Incompatible materials:	Strong acids and bases, oxidizing agents
Hazardous decomposition products:	In case of fire may be liberated: acids, aldehydes, phenol, 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 1 and Group 2B when in respirable form. 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.

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.
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Mobility in soil

No data available

Persistence and degradability

Further details:	No data available
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Additional ecological information

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

Product

Recommendation: Incinerate as hazardous waste 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. 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: UN3082
Proper shipping name: UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Bisphenol-A-(epichlorhydrin) epoxy resin (molecular weight <=700), Bisphenol-F-epichlorhydrine resin)

Hazard class or Division: 9
Packing Group: III
Labels: 9
Symbols: G
Special provisions: 8, 146, 173, 335, IB3, T4, TP1, TP29
Packaging – Exceptions: 155
Packaging – Non-bulk: 203
Packaging – Bulk: 241
Quantity limitations – Passenger aircraft / rail: No limit
Quantity limitations – Cargo only: No limit
Vessel stowage – Location: A



Sea transport (IMDG)

UN number: UN 3082
Proper shipping name: UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Bisphenol-A-(epichlorhydrin) epoxy resin (molecular weight <=700), Bisphenol-F-epichlorhydrine resin)

Class or division, Subsidiary risk: Class 9, Subrisk -
Packing Group: III
EmS: F-A, S-F
Special provisions: 274, 335, 969
Limited quantities: 5 L
Excepted quantities: E1
Contaminated packaging - Instructions: P001, LP01
Contaminated packaging - Provisions: PP1
IBC - Instructions: IBC03
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T4
Tank instructions - Provisions: TP2, TP29
Stowage and handling: Category A.
Properties and observations: -
Marine pollutant: yes
Segregation group: none

Air transport (IATA)

UN/ID number: UN 3082
Proper shipping name: UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Bisphenol-A-(epichlorhydrin) epoxy resin (molecular weight <=700), Bisphenol-F-epichlorhydrine resin)
Class or division, Subsidiary risk: Class 9
Packing Group: III
Hazard label: Miscellaneous
Excepted Quantity Code: E1
Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y964 - Max. Net Qty/Pkg. 30 kg G
Passenger and Cargo Aircraft: Pack.Instr. 964 - Max. Net Qty/Pkg. 450 L
Cargo Aircraft only: Pack.Instr. 964 - Max. Net Qty/Pkg. 450 L
Special provisions: A97 A158 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.

Silicon dioxide (Quartz (SiO₂)): Carcinogen Status:
IARC Rating: Group 1
OSHA Carcinogen: not listed
NTP Rating: listed
NIOSH Recommendations:
Occupational Health Guideline: 0553

Graphite: NIOSH Recommendations:
Occupational Health Guideline: 0306

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

National regulations - U.S. State Regulations

Silicon dioxide (Quartz (SiO₂)): California Proposition 65: cancer

Carbon: California Proposition 65: cancer

Trimethylolpropane triacrylate: California Proposition 65 not listed
Minnesota Haz. Substance:
Codes: I - Ratings: --

National regulations - Great Britain

Hazchem-Code: •3Z

16. Other information

Text for labeling: Contains < 70 % Bisphenol A epoxy resin, < 30 % Bisphenol-F-epichlorhydrine resin, < 25 % Silicon dioxide (Quartz (SiO₂)), < 15 % Graphite, < 5 % Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, chlorides, compds. with bentonite, < 2 % Carbon, < 1 % Trimethylolpropane triacrylate. Safety data sheet available on request.

Hazard rating systems:



NFPA Hazard Rating:

Health: 2 (Moderate)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 2 (Moderate)

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0
	X

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.