

## 1. Product and company identification

### Product identifier

Trade name: Toolfusion® 3A

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

General use: Epoxy resin  
For industrial purposes only

### 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](mailto:airtech@airtechintl.com)  
Website: [www.airtechonline.com](http://www.airtechonline.com)  
Telephone: +1 714.899.8100  
Dept. responsible for information:  
Telephone: +1 714.899.8100  
E-mail: [airtech@airtechintl.com](mailto:airtech@airtechintl.com)

Airtech Europe Sarl  
Zone industrielle Haneboesch  
L-4562 Differdange  
Luxembourg  
Website: [www.airtech.lu](http://www.airtech.lu)  
Telephone: +352 582.282  
Dept. responsible for information:  
Telephone: +352 582.282  
E-mail: [sales@airtech.lu](mailto:sales@airtech.lu)

Tygavac Advanced Materials Ltd.  
The Causeway  
Broadway Business Park  
Chadderton, Oldham  
OL9 9XD United Kingdom  
Website: [www.tygavac.co.uk](http://www.tygavac.co.uk)  
Telephone: +44 161.947.1610  
Dept. responsible for information:  
Telephone: +44 161.947.1610  
E-mail: [sales@tygavac.co.uk](mailto: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](http://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](mailto: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: yellowish  
Odor: characteristic  
Classification: Sensitization - skin - Category 1;

Hazard symbols:



Signal word: **Warning**  
Hazard statements: May cause an allergic skin reaction.

Precautionary statements:

Avoid breathing vapors.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF ON SKIN: Wash with plenty of water/soap.  
Specific treatment (see ' First aid ' on this label).  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.  
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**

see section 11: Toxicological information

**3. Composition / Information on ingredients**

Chemical characterization:

Epoxy resin and traces of Styrene, 1,3-Butadiene, Acrylonitrile, Methyl methacrylate.

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 2386-87-0	7-Oxabicyclo[4.1.0]hept-3-ylmethyl-7-oxabicyclo[4.1.0]heptane-3-carboxylate	>= 70 %	Sensitization - skin - Category 1.

Additional information: The maximum workplace exposure limits are, where necessary, listed in section 8.

**4. First aid measures**

In case of inhalation: Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Seek medical attention.

Following skin contact: Contaminated/fouled clothing and shoes must be removed immediately. Immediately clean with water and soap followed by thorough rinsing. Seek medical treatment in case of troubles.

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: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult physician immediately.

**Most important symptoms/effects, acute and delayed**

May cause an allergic skin reaction.

**Information to physician**

Treat symptomatically.

**5. Fire fighting measures**

Flash point/flash point range:

395.6 °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

In case of fire may be liberated: Phenols, carbon monoxide and carbon dioxide.  
Formation of numerous unknown compounds is possible.

Protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus. Wear appropriate protective equipment.

Additional information:

Cool endangered containers with water spray and, if possible, remove from danger zone.  
Use a water fog to control vapors. Do not breathe fumes.  
Do not allow water used to extinguish fire to enter drains, ground or waterways.

## 6. Accidental release measures

Personal precautions:

Avoid contact with skin, eyes, and clothing. Do not breathe vapor or spray.  
Wear appropriate protective equipment. Ensure adequate ventilation, especially in confined areas.  
Keep unprotected people away. Take off contaminated clothing and wash it before reuse.

Environmental precautions:

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

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.  
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

## 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.  
Wear appropriate protective equipment. When using do not eat, drink or smoke.  
Take off contaminated clothing and wash it before reuse.

Precautions against fire and explosion:

Usual measures for fire prevention.

### Storage

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place.  
Take care when re-opening already used containers.  
Protect from heat and direct sunlight. Keep container dry.  
Handle empty containers with care. Incineration may cause explosion.

Hints on joint storage:

Do not store together with strong bases, oxidizing agents, strong acids or amines.

## 8. Exposure controls / personal protection

### Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
100-42-5	Styrene	USA: ACGIH: STEL	170 mg/m <sup>3</sup> ; 40 ppm
		USA: ACGIH: TWA	85 mg/m <sup>3</sup> ; 20 ppm
		USA: NIOSH: STEL	425 mg/m <sup>3</sup> ; 100 ppm
		USA: NIOSH: TWA	215 mg/m <sup>3</sup> ; 50 ppm
		USA: OSHA: Ceiling	200 ppm (Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift: 600 ppm 5 mins. in any 3 hrs.)
		USA: OSHA: TWA	100 ppm (Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift: 600 ppm 5 mins. in any 3 hrs.)
80-62-6	Methyl methacrylate	USA: ACGIH: STEL	410 mg/m <sup>3</sup> ; 100 ppm
		USA: ACGIH: TWA	205 mg/m <sup>3</sup> ; 50 ppm
		USA: NIOSH: TWA	410 mg/m <sup>3</sup> ; 100 ppm
		USA: OSHA: TWA	410 mg/m <sup>3</sup> ; 100 ppm
106-99-0	1,3-Butadiene	USA: ACGIH: TWA	4.4 mg/m <sup>3</sup> ; 2 ppm
		USA: OSHA: STEL	11 mg/m <sup>3</sup> ; 5 ppm
		USA: OSHA: TWA	2.21 mg/m <sup>3</sup> ; 1 ppm
107-13-1	Acrylonitrile	USA: ACGIH: TWA	4.3 mg/m <sup>3</sup> ; 2 ppm (may be absorbed through the skin)
		USA: NIOSH: Ceiling	10 ppm (may be absorbed through the skin)
		USA: NIOSH: TWA	1 ppm (may be absorbed through the skin)
		USA: OSHA: Ceiling	10 ppm (may be absorbed through the skin)
		USA: OSHA: TWA	2 ppm (may be absorbed through the skin)

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
100-42-5	Styrene	USA: ACGIH-BEI, urine	40 µg/L	Styrene in urine	end of exposure or end of shift
		USA: ACGIH-BEI, urine	400 mg/g creatinine	Mandelic acid + Phenylglyoxylic acid	end of exposure or end of shift
106-99-0	1,3-Butadiene	USA: ACGIH-BEI, blood	2.5 pmol/g Hb	Mixture of N-1 and N2-(hydroxybutenyl)valine hemoglobin (Hb) adducts	No restriction
		USA: ACGIH-BEI, urine	2.5 mg/L	1,2-Dihydroxy-4-(N-acetylcysteinyl)-butane	end of exposure or end of shift

## 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 suitable protective clothing.  
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.  
Glove material: Neoprene.  
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.  
Do not breathe vapor or spray. Wear appropriate protective equipment.  
Work place should be equipped with a shower and an eye rinsing apparatus.  
When using do not eat, drink or smoke.  
Wash hands before breaks and after work.  
Take off contaminated clothing and wash it before reuse.

# 9. Physical and chemical properties

## Information on basic physical and chemical properties

Appearance:	Form: liquid Color: yellowish
Odor:	characteristic
Odor threshold:	No data available
pH value:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	> 482 °F
Flash point/flash point range:	395.6 °F
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Density:	1.1 g/mL
Water solubility:	negligible
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:	No data available
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions	Avoid contact with: amines (aliphatic). Polymerization along with heat production.
Conditions to avoid:	Keep away from heat sources, sparks and open flames. Heating will lead to pressure increase: Danger of bursting and explosion.
Incompatible materials:	Strong oxidizing agents, Lewis-acid or mineral acids and bases (organic and inorganic).
Hazardous decomposition products:	Emits toxic fumes under fire conditions. In case of fire may be liberated: 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:	The statements are derived from the properties of the single components. No toxicological data is available for the product as such. Acute toxicity (oral): Lack of data. Acute toxicity (dermal): Lack of data. Acute toxicity (inhalative): Lack of data. Skin corrosion/irritation: Lack of data. 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): Lack of data. Aspiration hazard: Lack of data.
------------------------	---

Other information: Information about styrene:  
Harmful if inhaled. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. lung damages May be fatal if swallowed and enters airways. Causes serious eye irritation. Causes skin irritation. For carcinogenic effects: IARC Rating: Group 2B OSHA Carcinogen: not listed NTP Rating: not listed

Information about 1,3-Butadiene:  
May cause cancer. May cause genetic defects.

Information about Acrylonitrile:  
Toxic if swallowed, in contact with skin or if inhaled. May cause cancer. Causes serious eye damage. May cause an allergic skin reaction. Causes skin irritation. May cause respiratory irritation.

Information about Methyl methacrylate:  
May cause an allergic skin reaction. Causes skin irritation. May cause respiratory irritation.

## Symptoms

In case of ingestion:  
Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.  
After eye contact: Causes tears. Pain, redness.

## 12. Ecological information

### Ecotoxicity

Aquatic toxicity: Information about  
7-Oxabicyclo[4.1.0]hept-3-ylmethyl-7-oxabicyclo[4.1.0]heptane-3-carboxylate:  
Fish toxicity:  
EC50 *Oncorhynchus mykiss*: 24 mg/L/96 h (OECD 203).  
Daphnia toxicity:  
LC50 *Daphnia magna* (Big water flea): 40 mg/L/48h (OECD 202).  
Algae toxicity:  
EC50 *Pseudokirchneriella subcapitata* (green algae): 90 mg/L/72h (OECD 201).

Effects in sewage plants: Information about  
7-Oxabicyclo[4.1.0]hept-3-ylmethyl-7-oxabicyclo[4.1.0]heptane-3-carboxylate:  
Toxicity to microorganisms:  
EC50 activated sludge: >2000 mg/L/3h (OECD 209).

### 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 as hazardous waste according to applicable local, state, and federal regulations.

**Contaminated packaging**

Recommendation: Waste key number 150102: Plastic container  
Waste key number 150104: Packages of metal  
Empty carefully and completely, if possible.  
Dispose of waste according to applicable legislation.

**14. Transport information**

**USA: Department of Transportation (DOT)**

Proper shipping name: Not restricted

**Sea transport (IMDG)**

Proper shipping name: Not restricted

Marine pollutant: no

**Air transport (IATA)**

Proper shipping name: Not restricted

**Further information**

No dangerous good in sense of these transport regulations.



## 15. Regulatory information

### National regulations - U.S. Federal Regulations

7-Oxabicyclo[4.1.0]hept-3-ylmethyl-7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Styrene:

TSCA Inventory: listed

TSCA HPVC: not listed

TSCA Inventory: listed

TSCA HPVC: not listed

Carcinogen Status:

IARC Rating: Group 2B

OSHA Carcinogen: not listed

NTP Rating: listed

Clean Air Act:

Hazardous Air Pollutants: Code XOY

SOCMI Chemical: yes

Clean Water Act:

Hazardous Substances: RQ 1000 lbs.

Other Environmental Laws:

CERCLA: RQ 1000 lbs.

RCRA Groundwater Monitoring: Methods 8020, 8240 / PQL 1, 5

SARA Title III Section 313, Toxic Release: Conc.

0.1% / Threshold Standard

NIOSH Recommendations:

Occupational Health Guideline: 0571

Methyl methacrylate:

TSCA Inventory: listed; EPA flags T

TSCA HPVC: not listed

TSCA: listed - Flags: T

Carcinogen Status:

IARC Rating: Group 3

OSHA Carcinogen: not listed

NTP Rating: not listed

Clean Air Act:

Hazardous Air Pollutants: Code XOY

SOCMI Chemical: yes

Clean Water Act:

Hazardous Substances: RQ 1000 lbs.

Other Environmental Laws:

CERCLA: RQ 1000 lbs.

RCRA Hazardous Wastes: Code U162

RCRA Groundwater Monitoring: Methods 8015, 8240 / PQL 2, 5

SARA Title III Section 313, Toxic Release: Conc.

1.0% / Threshold Standard

NIOSH Recommendations:

Occupational Health Guideline: 0426

1,3-Butadiene:

TSCA Inventory: listed  
TSCA HPVC: not listed  
Carcinogen Status:  
IARC Rating: Group 1  
OSHA Carcinogen: listed  
NTP Rating: listed  
Clean Air Act:  
Accidental Release Prevention: Threshold 10000 lbs.  
/ Basis for listing = f  
Hazardous Air Pollutants: Code XO  
SOCMI Chemical: yes  
Other Environmental Laws:  
CERCLA: RQ 10 lbs.  
SARA Title III Section 313, Toxic Release: Conc.  
0.1% / Threshold Standard  
NIOSH Recommendations:  
Occupational Health Guideline: 0067

Acrylonitrile:

TSCA Inventory: listed; EPA flags T  
TSCA HPVC: not listed  
Carcinogen Status:  
IARC Rating: Group 2B  
OSHA Carcinogen: listed  
NTP Rating: listed  
Clean Air Act:  
Accidental Release Prevention: Threshold 20000 lbs.  
/ Basis for listing = b  
Hazardous Air Pollutants: Code XO  
SOCMI Chemical: yes  
Clean Water Act:  
Hazardous Substances: RQ 100 lbs.  
Priority Pollutant: yes  
Other Environmental Laws:  
CERCLA: RQ 100 lbs.  
RCRA Hazardous Wastes: Code U009  
RCRA Groundwater Monitoring: Methods 8030, 8240  
/ PQL 5, 5  
SARA Title III Section 302, EHS: TPQ 10000 lbs. /  
RQ 100 lbs.  
SARA Title III Section 313, Toxic Release: Conc.  
0.1% / Threshold Standard  
NIOSH Recommendations:  
Occupational Health Guideline: 0014

**National regulations - U.S. State Regulations**

Styrene:	Delaware Air Quality Management List: DRQ: 1000 - RQ State: Federal Regulations Apply Idaho Air Pollutant List: Title 585 -- AAC: 1 -- EL: 6.67 -- WEL: - Title 586 - Maine Hazardous Air Pollutants: Me 2005: HAP - Hap Rpt: 2000 Massachusetts Haz. Substance codes: 1,2,4,5,6,9 *E*C* F7 F8 Michigan Critical Material: Note: 2 - CMR#: 27 - Parameter#: 00100-42-5 - Annual Usage Parameter: 100 Minnesota Haz. Substance: Codes: ANO -- Ratings: 9.63 -- Status: Air Pollutant. Carcinogen. Title III. TRI. New Jersey RTK Hazardous Substance: DOT 2055 - Sub No.: 1748 - TPQ: - New York List of Hazardous Substances: RQ -- Air: 1000 - RQ -- Land: 1 - Note: No Note Associated with this chemical. Pennsylvania Haz. Substance code: E Washington Air Contaminant: TWA: 50 ppm / 215 mg -- STEL: 100 ppm / 425 mg California Proposition 65: cancer
Methyl methacrylate:	Delaware Air Quality Management List: DRQ: 1000 - RQ State: Federal Regulations Apply Idaho Air Pollutant List: Title 585; AAC: 20,5 - EL: 27,3 - OEL: 410 - Title 586: - Massachusetts Haz. Substance Codes: 2,4,5,6 F8 F9 Main: HAP - 2000 Minnesota Haz. Substance: Codes: AO - Ratings: 3.79 - Status: Air Pollutant. Title III. TRI. New Jersey RTK Hazardous Substance: DOT: 1247 - Sub No.: 1277 New York List of Hazardous Substances: RQ-Air: 1000 - RQ-Land: 1 No Note Associated with this chemical Pennsylvania Haz. Substance Code: E Washington Air Contaminant: TWA: 100 ppm = 410 mg
1,3-Butadiene:	California Proposition 65: cancer
Acrylonitrile:	California Proposition 65: cancer

**National regulations - Great Britain**

Hazchem-Code: -

**16. Other information**

Text for labeling: Contains >= 70 %  
7-Oxabicyclo[4.1.0]hept-3-ylmethyl-7-oxabicyclo[4.1.0]heptane-3-carboxylate. 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.

## 1. Product and company identification

### Product identifier

Trade name: Toolfusion® 3B

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

General use: Modified Anhydride Curing Agent.  
For industrial purposes only.

### 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](mailto:airtech@airtechintl.com)  
Website: [www.airtechonline.com](http://www.airtechonline.com)  
Telephone: +1 714.899.8100  
Dept. responsible for information:  
Telephone: +1 714.899.8100  
E-mail: [airtech@airtechintl.com](mailto:airtech@airtechintl.com)

Airtech Europe Sarl  
Zone industrielle Haneboesch  
L-4562 Differdange  
Luxembourg  
Website: [www.airtech.lu](http://www.airtech.lu)  
Telephone: +352 582.282  
Dept. responsible for information:  
Telephone: +352 582.282  
E-mail: [sales@airtech.lu](mailto:sales@airtech.lu)

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

Odor: characteristic

Classification: Eye Damage - Category 1; Respiratory Sensitizer - Category 1; Sensitization - skin - Category 1;

Hazard symbols:



Signal word:

**Danger**

Hazard statements: May cause an allergic skin reaction.  
Causes serious eye damage.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements:  
Avoid breathing vapors.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection.  
[In case of inadequate ventilation] wear respiratory protection.  
IF ON SKIN: Wash with plenty of water/soap.  
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).  
If skin irritation or rash occurs: Get medical advice/attention.  
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.  
Take off contaminated clothing and wash it before reuse.  
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

see section 11: Toxicological information

## 3. Composition / Information on ingredients

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 19438-60-9	Hexahydro-4-methylphthalic anhydride	97.8 - 100 %	Eye Damage - Category 1. Respiratory Sensitizer - Category 1. Sensitization - skin - Category 1.

## 4. First aid measures

In case of inhalation: Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Seek medical attention.

Following skin contact: Immediately clean with water and soap followed by thorough rinsing. Take off immediately all 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: Rinse mouth with water. Do not induce vomiting.  
Give affected person large quantities of water, better milk. Seek medical attention.  
Never give anything by mouth to an unconscious person.

### Most important symptoms/effects, acute and delayed

May cause an allergic skin reaction.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Causes serious eye damage.

## Information to physician

Treat symptomatically.

## 5. Fire fighting measures

Flash point/flash point range:

230 °F (Hexahydro-4-methylphthalic anhydride)

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

Emits toxic fumes under fire conditions.

In case of fire may be liberated: hydrocarbons, 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.

## 6. Accidental release measures

Personal precautions:

Provide adequate ventilation. Avoid contact with skin, eyes, and clothing. Do not breathe vapor or spray. Wear appropriate protective equipment.

Environmental precautions:

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

Methods for clean-up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal.

## 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. Wear appropriate protective equipment.

When using do not eat, drink or smoke. Wash hands before breaks and after work.

Precautions against fire and explosion:

Keep away from heat sources, sparks and open flames.

### Storage

Requirements for storerooms and containers:

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

Do not drop, drag or bang the container. Protect from frost. Protect against direct sunlight.

Hints on joint storage:

Keep away from food and drinks.

## 8. Exposure controls / personal protection

### 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: Rubber.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
- Respiratory protection: When vapors form, use respiratory protection.  
Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.
- General hygiene considerations:  
Avoid contact with skin, eyes, and clothing. Do not breathe vapor or spray. Work place should be equipped with a shower and an eye rinsing apparatus. 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: colorless, clear
- Odor: characteristic
- 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 (Hexahydro-4-methylphthalic anhydride)
- Evaporation rate: No data available
- Flammability: No data available
- Explosion limits: No data available
- Vapor pressure: 5.7 hPa
- Vapor density: No data available
- Density: 1.16 g/mL
- Water solubility: Contact with water liberates acid.
- Partition coefficient: n-octanol/water: No data available
- Auto-ignition temperature: No data available
- Thermal decomposition: No data available
- Viscosity, kinematic: 90 - 110 mPa\*s
- Solid content: >= 99 %

## 10. Stability and reactivity

- Reactivity: Contact with water liberates acid.



Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions  
Hazardous polymerisation: Will not occur.

Conditions to avoid: Excessive heating, humidity. Keep away from heat sources, sparks and open flames.  
Avoid the formation of aerosol/vapors.

Incompatible materials: Avoid contact with strong oxidizing agents and Water .

Hazardous decomposition products:  
In case of fire may be liberated: hydrocarbons, carbon monoxide and carbon dioxide.

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: Lack of data.  
Serious eye damage/irritation: Eye Damage - Category 1 = Causes serious eye damage.  
Sensitisation to the respiratory tract: Respiratory Sensitizer -  
Category 1 = May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
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): Lack of data.  
Aspiration hazard: Lack of data.

### Symptoms

In case of inhalation:  
Symptoms: Tickel in the throat, cough, wheezing, shortness of breath.  
After contact with skin: Upon direct contact with skin may cause itching and redness.

## 12. Ecological information

### Ecotoxicity

Further details: No data available

### 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 as hazardous waste according to applicable local, state, and federal regulations.

### Contaminated packaging

Recommendation: Waste key number 150102 - Plastic packaging  
Waste key number 150104 - Metallic packaging  
Dispose of waste according to applicable legislation.

## 14. Transport information

### USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

### Sea transport (IMDG)

Proper shipping name: Not restricted

Marine pollutant: no

### Air transport (IATA)

Proper shipping name: Not restricted

### Further information

No dangerous good in sense of these transport regulations.

## 15. Regulatory information

### National regulations - U.S. Federal Regulations

Hexahydro-4-methylphthalic anhydride: TSCA Inventory: listed  
TSCA HPVC: not listed

### National regulations - Great Britain

Hazchem-Code: -

## 16. Other information

Text for labeling: Contains 97.8 - 100 % Hexahydro-4-methylphthalic anhydride. Safety data sheet available on request.

Hazard rating systems: NFPA Hazard Rating:  
Health: 2 (Moderate)  
Fire: 1 (Slight)  
Reactivity: 1 (Slight)



HMIS Version III Rating:  
Health: 2 (Moderate)  
Flammability: 1 (Slight)  
Physical Hazard: 1 (Slight)  
Personal Protection: X = Consult your supervisor

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	1
	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.