

Material Safety Data Sheet

Methyl isothiocyanate

ACC# 07204

Section 1 - Chemical Product and Company Identification

MSDS Name: Methyl isothiocyanate

Catalog Numbers: AC414470250

Synonyms: Isothiocyanatomethane; Isothiocyanic acid, methyl ester; Methyl mustard oil.

Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
556-61-6	Methyl isothiocyanate	100	209-132-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless crystals.

Danger! Causes eye and skin burns. May be fatal if absorbed through the skin. Harmful if inhaled or swallowed. Vesicant (agent that induces blistering). May cause allergic skin reaction. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns.

Target Organs: Respiratory system, gastrointestinal system, eyes, skin.

Potential Health Effects

Eye: Causes eye burns. May cause chemical conjunctivitis and corneal damage.

Skin: May be fatal if absorbed through the skin. Causes skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. This material is a vesicant, that is, it will induce blistering. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

Ingestion: Harmful if swallowed. May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. Human fatalities have been reported from acute poisoning. May cause systemic effects.

Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract. Aspiration may lead to pulmonary edema. May cause systemic effects.

Chronic: Repeated exposure may cause sensitization dermatitis. Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Will react with water to form toxic and corrosive fumes. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff to sewer may create fire or explosion hazard.

Extinguishing Media: For large fires, use water spray, fog, or alcohol-resistant foam. Do NOT get water inside containers. Do NOT use straight streams of water. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Most foams will react with the material and release corrosive/toxic gases. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Discard contaminated shoes.

Storage: Store in a cool, dry place. Keep container closed when not in use. Keep away from water. Corrosives area. Do not store in metal containers.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methyl isothiocyanate	none listed	none listed	none listed

OSHA Vacated PELs: Methyl isothiocyanate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear polyethylene gloves, apron, and/or clothing. Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear polyethylene gloves, apron, and/or clothing. Wear appropriate protective clothing to minimize contact with skin.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: colorless

Odor: pungent odor

pH: Not available.

Vapor Pressure: 19 mm Hg @ 25C

Vapor Density: 2.53

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 119 deg C @ 758mmHg

Freezing/Melting Point: 35.00 - 37.00 deg C

Decomposition Temperature: Not available.

Solubility: Slightly soluble.

Specific Gravity/Density: 1.0690g/cm³

Molecular Formula: C₂H₃NS

Molecular Weight: 73.12

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, excess heat, strong oxidants.

Incompatibilities with Other Materials: Water, strong oxidizing agents, acids, strong bases, alcohols, amines.

Hazardous Decomposition Products: Carbon monoxide, oxides of nitrogen, oxides of sulfur, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:

CAS# 556-61-6: PA9625000

LD50/LC50:

CAS# 556-61-6:

Draize test, rabbit, eye: 100 mg Severe;

Draize test, rabbit, skin: 500 mg/24H Moderate;

Inhalation, rat: LC50 = 1900 mg/m³/1H;

Oral, mouse: LD50 = 90 mg/kg;

Oral, rat: LD50 = 72 mg/kg;

Skin, rabbit: LD50 = 33 mg/kg;
Skin, rat: LD50 = 2780 mg/kg;

Carcinogenicity:

CAS# 556-61-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Experimental reproductive effects have been reported.

Teratogenicity: No information found

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: 0.13mg/L; 96H; Fish: Carp: 37mg/L; 96H; No data available.

Environmental: Terrestrial: The two processes that may be important are volatilization and biodegradation. Aquatic: Both biodegradation and evaporation are likely to be important loss processes. Atmospheric: Because of its relatively high water solubility, wet deposition may partly remove the compound from the atmosphere, half-life 11.1 days. Expected to biodegrade but not bioconcentrate.

Physical: Phytotoxic to all green plants.

Other: For more information, see "HANDBOOK OF ENVIRONMENTAL FATE AND EXPOSURE DATA."

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	METHYL ISOTHIOCYANATE	METHYL ISOTHIOCYANATE
Hazard Class:	6.1	6.1(3)
UN Number:	UN2477	UN2477
Packing Group:	I	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 556-61-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

CAS# 556-61-6: 500 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solvent form)

Section 313

This material contains Methyl isothiocyanate (CAS# 556-61-6, 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 556-61-6 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T

Risk Phrases:

R 23/25 Toxic by inhalation and if swallowed.
R 34 Causes burns.
R 43 May cause sensitization by skin contact.

Safety Phrases:

S 36/37 Wear suitable protective clothing and gloves.
S 38 In case of insufficient ventilation, wear suitable respiratory equipment.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 556-61-6: 3

Canada - DSL/NDSL

CAS# 556-61-6 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D1A, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 7/19/1999

Revision #4 Date: 10/05/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.