

# Material Safety Data Sheet

## Bromoform, spectro grade, (inhibitor: ethanol), 99%

ACC# 95929

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Bromoform, spectro grade, (inhibitor: ethanol), 99%

**Catalog Numbers:** AC403010000, AC403010500

**Synonyms:** Tribromomethane; Methenyl tribromide.

**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
75-25-2	Bromoform	99	200-854-6

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: clear to yellow liquid.

**Warning!** Causes respiratory tract irritation. Causes eye and skin irritation. May be harmful if absorbed through the skin. May be harmful if swallowed. May cause central nervous system depression. May cause liver and kidney damage.

**Target Organs:** Kidneys, central nervous system, liver.

#### Potential Health Effects

**Eye:** Causes eye irritation. Lachrymator (substance which increases the flow of tears). May cause chemical conjunctivitis.

**Skin:** Causes skin irritation. May be absorbed through the skin in harmful amounts.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause central nervous system depression. Human fatalities have been reported from acute poisoning.

**Inhalation:** Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause liver and kidney damage. May cause narcotic effects in high concentration. Can produce delayed pulmonary edema.

**Chronic:** Repeated exposure may cause central nervous system damage. Effects may be delayed.

### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed.

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

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

**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. Use extinguishing media appropriate to the surrounding fire. Substance is noncombustible. 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.

**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers. For large fires, use water spray, fog or regular foam. For small fires, use dry chemical, carbon dioxide, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out.

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 1; Instability: 0

### Section 6 - Accidental Release Measures

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

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse.

**Storage:** Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from metals. Do not store in metal containers. Keep away from strong bases.

## 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
Bromoform	0.5 ppm TWA; skin - potential for cutaneous absorption	0.5 ppm TWA; 5 mg/m <sup>3</sup> TWA 850 ppm IDLH	0.5 ppm TWA; 5 mg/m <sup>3</sup> TWA

**OSHA Vacated PELs:** Bromoform: 0.5 ppm TWA; 5 mg/m<sup>3</sup> TWA

### 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 appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**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 a respirator's use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** clear to yellow

**Odor:** chloroform-like

**pH:** Not available.

**Vapor Pressure:** 4.4 mm Hg @20 C

**Vapor Density:** 8.7

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 302 deg F

**Freezing/Melting Point:** 7.3-8.8 deg C

**Decomposition Temperature:** Not available.

**Solubility:** 0.1%

**Specific Gravity/Density:** 2.89

**Molecular Formula:** CHBr<sub>3</sub>

**Molecular Weight:** 252.73

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Conditions to Avoid:** Incompatible materials, metals, excess heat, strong oxidants, bases.

**Incompatibilities with Other Materials:** Strong oxidizing agents, strong acids.

**Hazardous Decomposition Products:** Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, hydrogen bromide.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

### RTECS#:

**CAS#** 75-25-2: PB5600000

### LD50/LC50:

**CAS#** 75-25-2:

Inhalation, mouse: LC50 = 12100 mg/m<sup>3</sup>/2H;

Oral, mouse: LD50 = 1072 mg/kg;

Oral, rat: LD50 = 933 mg/kg;

### Carcinogenicity:

**CAS#** 75-25-2:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 4/1/91

**Epidemiology:** IARC Group 3: Limited or insufficient evidence for carcinogenicity in both animals and humans.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Neurotoxicity:** No information available.

**Mutagenicity:** No information available.

**Other Studies:** See actual entry in RTECS for complete information.

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** Terrestrial: Expected to bind weakly to soil and may, therefore, leach to groundwater. Aquatic: Expected to volatilize. Atmospheric: A half-life of 1.45 years was estimated for the reaction of tribromomethane with photochemically generated hydroxyl radicals in the atmosphere. Direct photolysis in the troposphere is not expected to be a significant degradation process. therefore, leach to groundwater. Anaerobic biodegradation may occur, but aerobic biodegradation is not expected to be significant.

**Physical:** No information available.

**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:**

CAS# 75-25-2: waste number U225.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	BROMOFORM	BROMOFORM
<b>Hazard Class:</b>	6.1	6.1
<b>UN Number:</b>	UN2515	UN2515
<b>Packing Group:</b>	III	III

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 75-25-2 is listed on the TSCA inventory.

#### Health & Safety Reporting List

CAS# 75-25-2: Effective 6/1/87, Sunset 6/1/97

#### Chemical Test Rules

CAS# 75-25-2: hydrolysis testing for Chemical Fate

#### 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

CAS# 75-25-2: 100 lb final RQ; 45.4 kg final RQ

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 75-25-2: acute, chronic.

#### Section 313

This material contains Bromoform (CAS# 75-25-2, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

#### Clean Air Act:

CAS# 75-25-2 is listed as a hazardous air pollutant (HAP).

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. CAS# 75-25-2 is listed as a Priority Pollutant under the Clean Water Act. CAS# 75-25-2 is listed as a Toxic Pollutant under the Clean Water Act.

#### OSHA:

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

#### STATE

CAS# 75-25-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

#### California Prop 65

**The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:**

WARNING: This product contains Bromoform, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 75-25-2: 64 æg/day NSRL

### European/International Regulations

## European Labeling in Accordance with EC Directives

### Hazard Symbols:

T N

### Risk Phrases:

R 23 Toxic by inhalation.

R 36/38 Irritating to eyes and skin.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### Safety Phrases:

S 28 After contact with skin, wash immediately with...

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

### WGK (Water Danger/Protection)

CAS# 75-25-2: No information available.

### Canada - DSL/NDSL

CAS# 75-25-2 is listed on Canada's DSL List.

### Canada - WHMIS

This product has a WHMIS classification of D1B, D2A.

### Canadian Ingredient Disclosure List

CAS# 75-25-2 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 11/05/1998

**Revision #6 Date:** 3/04/2004

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