

# Material Safety Data Sheet

## Methyl formate, 97%

ACC# 97142

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Methyl formate, 97%

**Catalog Numbers:** AC126820000, AC126820010, AC126820025, AC126820200

**Synonyms:** Methyl methanoate; Formic acid methyl ester.

**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
107-31-3	Methyl formate	97	203-481-7

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: -19 deg C.

**Danger!** Extremely flammable liquid and vapor. Vapor may cause flash fire. Causes respiratory tract irritation. Harmful if inhaled or swallowed. Causes eye and skin irritation.

**Target Organs:** Central nervous system, lungs, eyes, skin.

**Potential Health Effects**

**Eye:** Contact produces irritation, tearing, and burning pain. May cause conjunctivitis.

**Skin:** Causes severe skin irritation. May be absorbed through the skin.

**Ingestion:** Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

**Inhalation:** Harmful if inhaled. Causes respiratory tract irritation. Irritation may lead to chemical pneumonitis and pulmonary edema. Causes narcotic effects including headache, dizziness, weakness, unconsciousness.

**Chronic:** No information found.

### 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 immediately.

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

**Ingestion:** 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.

**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. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

**Extinguishing Media:** Use water spray to cool fire-exposed containers. Use dry chemical, carbon dioxide, or alcohol-resistant foam.

**Flash Point:** -19 deg C ( -2.20 deg F)

**Autoignition Temperature:** 449 deg C ( 840.20 deg F)

**Explosion Limits, Lower:**4.5

**Upper:** 23

**NFPA Rating:** (estimated) Health: 2; Flammability: 4; Instability: 0

### Section 6 - Accidental Release Measures

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

**Spills/Leaks:** Wash area with soap and water. Clean up spills immediately, observing precautions in the Protective Equipment section. Cover with an activated carbon adsorbent and place into a closed container for disposal. Remove all sources of ignition. Isolate area and deny entry. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Contents may develop pressure upon prolonged storage. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor or mist.

**Storage:** Keep away from heat, sparks, and flame. Store in a tightly closed container. Store protected from moisture.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methyl formate	100 ppm TWA; 150 ppm STEL	100 ppm TWA; 250 mg/m <sup>3</sup> TWA 4500 ppm IDLH	100 ppm TWA; 250 mg/m <sup>3</sup> TWA

**OSHA Vacated PELs:** Methyl formate: 100 ppm TWA; 250 mg/m<sup>3</sup> TWA

### Personal Protective Equipment

**Eyes:** Wear chemical splash goggles.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

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

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** colorless

**Odor:** Agreeable odor.

**pH:** Not available.

**Vapor Pressure:** 476 mm Hg @ 20 deg C

**Vapor Density:** 2.07 (air=1)

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 31-33 deg C

**Freezing/Melting Point:** -99.8 deg C

**Decomposition Temperature:** Not available.

**Solubility:** Soluble.

**Specific Gravity/Density:** 0.975

**Molecular Formula:** C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>

**Molecular Weight:** 60.04

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable. However, may react slowly with water forming corrosive acid.

**Conditions to Avoid:** Ignition sources, moisture, excess heat.

**Incompatibilities with Other Materials:** Oxidizing agents; bases; acids. Reacts with methanol + sodium methoxide to form an explosive product.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, formic acid, methanol.

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

## Section 11 - Toxicological Information

### RTECS#:

CAS# 107-31-3: LQ8925000

### LD50/LC50:

CAS# 107-31-3:

Dermal, guinea pig: LD50 = >20 mL/kg;

Inhalation, rat: LC50 = 5200 mg/m<sup>3</sup>/4H;

Oral, mouse: LD50 = 675 mg/kg;

Oral, rabbit: LD50 = 1622 mg/kg;

Oral, rat: LD50 = 475 mg/kg;

Skin, rabbit: LD50 = >5 gm/kg;

Skin, rat: LD50 = >4 gm/kg;

### Carcinogenicity:

CAS# 107-31-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No data available.

**Teratogenicity:** No data available.  
**Reproductive Effects:** No data available.  
**Mutagenicity:** No data available.  
**Neurotoxicity:** No data available.  
**Other Studies:**

## Section 12 - Ecological Information

No information available.

## 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
<b>Shipping Name:</b>	METHYL FORMATE	METHYL FORMATE
<b>Hazard Class:</b>	3	3
<b>UN Number:</b>	UN1243	UN1243
<b>Packing Group:</b>	I	I
<b>Additional Info:</b>		FLASHPOINT -19 C

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 107-31-3 is listed on the TSCA inventory.

#### Health & Safety Reporting List

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

#### Chemical Test Rules

CAS# 107-31-3: Testing required by manufacturers, processors

#### Section 12b

CAS# 107-31-3: Section 4

#### 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

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 107-31-3: immediate, fire.

#### Section 313

No chemicals are reportable under Section 313.

#### 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# 107-31-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, 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:

XN F+

#### Risk Phrases:

R 12 Extremely flammable.  
R 20/22 Harmful by inhalation and if swallowed.  
R 36/37 Irritating to eyes and respiratory system.

#### Safety Phrases:

- S 16 Keep away from sources of ignition - No smoking.
- S 24 Avoid contact with skin.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 33 Take precautionary measures against static discharges.
- S 9 Keep container in a well-ventilated place.

**WGK (Water Danger/Protection)**

CAS# 107-31-3: 1

**Canada - DSL/NDSL**

CAS# 107-31-3 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B2, 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**

CAS# 107-31-3 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

**MSDS Creation Date:** 10/21/1997

**Revision #5 Date:** 10/03/2005

*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.*