

# Material Safety Data Sheet

## Unsym-Dimethylhydrazine, 99%

ACC# 04536

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Unsym-Dimethylhydrazine, 99%

**Catalog Numbers:** AC116320000, AC116320100, AC116321000, AC116322500, AC116325000

**Synonyms:** 1,1-Dimethylhydrazine; UDMH

**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
57-14-7	Unsym-Dimethylhydrazine	99	200-316-0

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: clear light yellow liquid. Flash Point: -17 deg C.

**Danger!** Highly flammable. Corrosive. Causes eye and skin burns. Harmful if inhaled or swallowed. May be harmful if absorbed through the skin. May cause severe digestive tract irritation with possible burns. Cancer suspect agent. May cause severe respiratory tract irritation with possible burns. May cause central nervous system depression.

**Target Organs:** Central nervous system, liver.

#### Potential Health Effects

**Eye:** Causes eye burns. May result in corneal injury.

**Skin:** Causes skin burns. May be harmful if absorbed through the skin.

**Ingestion:** Harmful if swallowed. May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause liver damage.

**Inhalation:** Harmful if inhaled. Causes chemical burns to the respiratory tract. Exposure produces central nervous system depression. Vapors may cause dizziness or suffocation.

**Chronic:** Possible cancer hazard based on tests with laboratory animals. Chronic exposure may cause liver damage.

### 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. Never give anything by mouth to an unconscious person. 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.

**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. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. 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. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Will be easily ignited by heat, sparks or flame.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

**Flash Point:** -17 deg C ( 1.40 deg F)

**Autoignition Temperature:** 249 deg C ( 480.20 deg F)

**Explosion Limits, Lower:**2.9

**Upper:** 95

**NFPA Rating:** (estimated) Health: 4; Flammability: 3; Instability: 1

### 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. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not get on skin or in eyes. Avoid ingestion and inhalation. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Keep away from heat, sparks, and flame. Keep away from sources of ignition. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Refrigerator/flammables.

## 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
Unsym-Dimethylhydrazine	0.01 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	15 ppm IDLH	0.5 ppm TWA; 1 mg/m <sup>3</sup> TWA

**OSHA Vacated PELs:** Unsym-Dimethylhydrazine: 0.5 ppm TWA; 1 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 respirator use. 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:** clear light yellow

**Odor:** fishy ammonical

**pH:** Strongly alkaline

**Vapor Pressure:** 145 mbar @ 20 C

**Vapor Density:** 1.94

**Evaporation Rate:** Not available.

**Viscosity:** 0.56 cP 20.00 deg

**Boiling Point:** 62.0 - 64.0 deg C @ 753.00mmHg

**Freezing/Melting Point:** -58 deg C

**Decomposition Temperature:** Not available.

**Solubility:** miscible

**Specific Gravity/Density:** 1.7800g/cm<sup>3</sup>

**Molecular Formula:** C<sub>2</sub>H<sub>8</sub>N<sub>2</sub>

**Molecular Weight:** 60.10

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Incompatible materials, ignition sources, dust generation, excess heat.

**Incompatibilities with Other Materials:** Halogens, mercury, strong acids, strong oxidizing agents, rubber, plastics.

**Hazardous Decomposition Products:** Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.

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

## Section 11 - Toxicological Information

### RTECS#:

**CAS#** 57-14-7: MV2450000

### LD50/LC50:

**CAS#** 57-14-7:

Dermal, guinea pig: LD50 = 1329 mg/kg;

Inhalation, mouse: LC50 = 172 ppm/4H;

Inhalation, rat: LC50 = 252 ppm/4H;

Oral, mouse: LD50 = 155 mg/kg;

Oral, rat: LD50 = 122 mg/kg;  
Skin, rabbit: LD50 = 1060 mg/kg;  
Skin, rat: LD50 = 770 mg/kg;

**Carcinogenicity:**

CAS# 57-14-7:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 10/1/89
- **NTP:** Suspect carcinogen
- **IARC:** Group 2B carcinogen

**Epidemiology:** Has been found to cause cancer in laboratory animals.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.

**Neurotoxicity:** No information available.

**Other Studies:**

## Section 12 - Ecological Information

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

**Environmental:** Terrestrial: Not expected to adsorb to sediments. Aquatic: Will not settle in sediment, volatilizes into atmosphere.

Atmospheric: Exists mainly in vapor phase, half-life 6 days. Not expected to bioconcentrate or biodegrade.

**Physical:** No information available.

**Other:** 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:**

CAS# 57-14-7: waste number U098.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	DIMETHYLHYDRAZINE, UNSYMMETRICAL	DIMETHYLHYDRAZINE, UNSYMMETRICAL
<b>Hazard Class:</b>	6.1	6.1(3)(8)
<b>UN Number:</b>	UN1163	UN1163
<b>Packing Group:</b>	I	I

## Section 15 - Regulatory Information

### US FEDERAL

**TSCA**

CAS# 57-14-7 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**

CAS# 57-14-7: 10 lb final RQ; 4.54 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

CAS# 57-14-7: 1000 lb TPQ

**SARA Codes**

CAS # 57-14-7: immediate, delayed, fire, reactive.

**Section 313**

This material contains Unsym-Dimethylhydrazine (CAS# 57-14-7, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

**Clean Air Act:**

CAS# 57-14-7 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

**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:**

CAS# 57-14-7 is considered highly hazardous by OSHA.

**STATE**

CAS# 57-14-7 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 Unsym-Dimethylhydrazine, a chemical known to the state of California to cause cancer.

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 F

**Risk Phrases:**

R 11 Highly flammable.

R 23/25 Toxic by inhalation and if swallowed.

R 34 Causes burns.

R 45 May cause cancer.

**Safety Phrases:**

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

S 53 Avoid exposure - obtain special instructions before use.

**WGK (Water Danger/Protection)**

CAS# 57-14-7: No information available.

**Canada - DSL/NDSL**

CAS# 57-14-7 is listed on Canada's NDSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B2, D1A, D2A, E.

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# 57-14-7 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

**MSDS Creation Date:** 6/12/1998

**Revision #4 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.*