# Material Safety Data Sheet
## Formamide, reagent ACS

ACC# 96114

## Section 1 - Chemical Product and Company Identification

**MSDS Name:** Formamide, reagent ACS
**Catalog Numbers:** AC423740000, AC423740010, AC423740040, AC423741000, AC423745000
**Synonyms:** Carbamaldehyde; Methanamide.
**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 |
|---|---|---|---|
| 75-12-7 | Formamide | 100 | 200-842-0 |

## Section 3 - Hazards Identification

### EMERGENCY OVERVIEW

Appearance: clear, colorless liquid.
**Warning!** Harmful if swallowed, inhaled, or absorbed through the skin. Causes respiratory tract irritation. Causes eye and skin irritation. May cause central nervous system effects. Hygroscopic (absorbs moisture from the air). May cause reproductive and fetal effects.
**Target Organs:** Central nervous system, liver, eyes, reproductive system, skin, mucous membranes.

### Potential Health Effects

**Eye:** Causes eye irritation.
**Skin:** Causes skin irritation. Harmful if absorbed through the skin. Not expected to cause an allergic skin reaction. Studies have shown that formamide can be absorbed through the skin in quantities sufficient to produce systemic toxicity even though it is not very acutely toxic via this route and effective doses were relatively high.
**Ingestion:** Harmful if swallowed. May cause irritation of the digestive tract. May cause central nervous system effects.
**Inhalation:** Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation.
**Chronic:** Prolonged or repeated exposure may cause adverse reproductive effects. May cause fetal effects. Chronic exposure may cause liver damage. There is a danger of cumulative effects. Animal experiments show that small amounts of formamide, if repeatedly inhaled, ingested, or absorbed through the skin, can cause embryotoxicity. At levels sufficiently high to result in maternal illness, fetal malformations and fetal death have occurred.Rats exposed (occluded doses to intact skin) to dose level of 3000 mg/kg/day for 6 hrs/day, 5 days/week for 3 months had a decrease in the absolute weight of the testes and an increase in the number of rats with bilateral testicular tubular atrophy.

## Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
**Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
**Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
**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.
**Extinguishing Media:** Use dry chemical, carbon dioxide, or appropriate foam.
**Flash Point:** 154 deg C ( 309.20 deg F)
**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. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Pregnant workers should keep exposure to a minimum.
**Storage:** Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture. Refrigeration has been recommended.

## 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 general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
**Exposure Limits**

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|---|---|---|---|
| Formamide | 10 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute | 10 ppm TWA; 15 mg/m3 TWA | none listed |

**OSHA Vacated PELs:** Formamide: 20 ppm TWA; 30 mg/m3 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:** clear, colorless
**Odor:** ammonia-like - weak odor
**pH:** 7.1 (0.5M aq soln)
**Vapor Pressure:** .06 mm Hg @ 25 deg C
**Vapor Density:** 1.6 (air=1)
**Evaporation Rate:**<1.0 (butyl acetate=1)
**Viscosity:** Not available.
**Boiling Point:** 210 deg C
**Freezing/Melting Point:**2-3 deg C
**Decomposition Temperature:**180 deg C
**Solubility:** Soluble.
**Specific Gravity/Density:**1.13 (water=1)
**Molecular Formula:**CH3NO
**Molecular Weight:**45.04

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.
**Conditions to Avoid:** Light, moisture, temperatures >180°C as formamide will begin to partially decompose into carbon monoxide and ammonia.
**Incompatibilities with Other Materials:** Strong oxidizing agents, strong acids, ammonia, isocyanates, phenols and cresols, iodine, sulfur trioxide, pyridine.
**Hazardous Decomposition Products:** Hydrogen cyanide, nitrogen oxides, carbon monoxide, carbon dioxide, ammonia.
**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**
**CAS#** 75-12-7: LQ0525000
**LD50/LC50:**
CAS# 75-12-7:
Draize test, rabbit, eye: 100 mg Severe;
Inhalation, rat: LC50 = >3900 ppm/6H;
Oral, mouse: LD50 = 3150 mg/kg;
Oral, rat: LD50 = 5577 mg/kg;
Skin, rabbit: LD50 = 17 gm/kg;

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**Carcinogenicity:**
CAS# 75-12-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.
**Teratogenicity:** Embryo or Fetus: Death, skin-rat TDLo=1200mg/kg; Stunted fetus, oral-rat TDLo=2g/kg. Specific Developmental Abnormalities: Craniofacial and Musculoskeletal, oral-rat TDLo=7980mg/kg.
**Reproductive Effects:** Fertility: Post-implantation mortality, oral-rat TDLo=2g/kg.
**Mutagenicity:** Please refer to RTECS LQ0525000 for mutation data.
**Neurotoxicity:** No information available.
**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. Minnow LC50=>500mg/L/48H
**Environmental:** No information available.
**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:** None listed.

## Section 14 - Transport Information

| | US DOT | Canada TDG |
|---|---|---|
| **Shipping Name:** | Not regulated as a hazardous material | No information available. |
| **Hazard Class:** | | |
| **UN Number:** | | |
| **Packing Group:** | | |

## Section 15 - Regulatory Information

### US FEDERAL

**TSCA**
CAS# 75-12-7 is listed on the TSCA inventory.
**Health & Safety Reporting List**
CAS# 75-12-7: Effective 4/29/83, Sunset 4/29/93
**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**
None of the chemicals in this product have a TPQ.
**SARA Codes**
CAS # 75-12-7: immediate, delayed.
**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 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:**
None of the chemicals in this product are considered highly hazardous by OSHA.
**STATE**
CAS# 75-12-7 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:**
T
**Risk Phrases:**
R 61 May cause harm to the unborn child.

**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# 75-12-7: 1
**Canada - DSL/NDSL**
CAS# 75-12-7 is listed on Canada's DSL List.
**Canada - WHMIS**
This product has a WHMIS classification of D2A.
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# 75-12-7 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 12/12/1997
**Revision #9 Date:** 10/03/2005