

MATERIAL SAFETY DATA SHEET

CELANESE CHEMICAL COMPANY, INC.
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EMERGENCY TELEPHONE NO: 806-665-5522
INFORMATION TELEPHONE NO: 214-689-4000
REVISION DATE: 11/79

I. IDENTIFICATION
 PRODUCT NAME: **FORMALIN** (CE79)-MI-0602
 CHEMICAL NAME: **Formaldehyde**
 CHEMICAL FAMILY: **Aldehyde**
 FORMULA: **HCHO**
 MOLECULAR WEIGHT: **33.03**
 DISTRIBUTED BY: **HYDRITE CHEMICAL CO.**
 2655 N. Mayfair Rd.
 Milwaukee, WI 53211
 414 257-2300

SYNONYMS: **Methylene Oxide; Methylene Glycol, Formaldehyde Solution**
 DEPARTMENT OF TRANSPORTATION: **HAZARD CLASSIFICATION: Combustible**
 SHIPPING NAME: **Formaldehyde, Liquid**

CHEMICAL ABSTRACT REGISTRY NAME: **Formaldehyde**
 CHEMICAL ABSTRACT REGISTRY NUMBER: **50-00-0**

II. PHYSICAL DATA
 BOILING POINT, 760 mm. Hg: **96.1-101.1°C**
 FREEZING POINT: **None**
 VAPOR PRESSURE: **@ 37.7°C - 47 mm Hg**
@ 55.0°C - 110 mm Hg
 SOLUBILITY IN WATER % BY WT: **Complete**
 EVAPORATION RATE: **N.A.**
 SPECIFIC GRAVITY (H₂O = 1): **@ 25/25°C 1.08-1.16**
 VAPOR DENSITY (AIR = 1): **1.03**
 PERCENT VOLATILES BY VOLUME: **100**

APPEARANCE AND ODOR: **Clear, colorless liquid, pungent odor.**

III. HAZARDOUS INGREDIENTS

| MATERIAL | HAZARD | % | CAS NO. | TLV ^R |
|----------|--------|---|---------|------------------|
| | | | | |

IV. FIRE AND EXPLOSION HAZARD DATA
 FLAMMABLE LIMITS IN AIR, % BY VOLUME: **LOWER 7.0**
UPPER 73.0
 FLASH POINT (TEST METHOD): **185°F, TCC**

EXTINGUISHING MEDIA: **Carbon dioxide, dry chemical, foam or water spray.**
 SPECIAL FIRE FIGHTING PROCEDURES: **When fighting indoor fires, self-contained breathing apparatus is necessary; outdoors this apparatus should be available.**
 UNUSUAL FIRE AND EXPLOSION HAZARDS: **None.**

V. REACTIVITY DATA
 STABILITY: **UNSTABLE** STABLE

CONDITIONS TO AVOID: **Strong alkalis and high temperatures.**
 INCOMPATIBILITY (MATERIALS TO AVOID): **Strong oxidizing agents, caustics, strong alkalis, isocyanates, anhydrides, oxides and inorganic acids.**
 HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: **Formaldehyde vapors are strong irritants. Thermal decomposition products - carbon dioxide and carbon monoxide.**
 HAZARDOUS POLYMERIZATION: **None.** MAY OCCUR WILL NOT OCCUR CONDITIONS TO AVOID

This information is based on data believed by Celanese Chemical Company, Inc. to be accurate, but no warranty, express or implied, is made.

VI. HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL (OSHA STANDARD)

1 ppm - 8-hr. TWA

TLV (THRESHOLD LIMIT VALUE) 2 ppm - Ceiling

SOURCE: ACGIH

OTHER 1 ppm - NIOSH proposed.

ACUTE EFFECTS OF EXPOSURE

INGESTION (SWALLOWING) Causes severe irritation & inflammation of mouth, throat & stomach. Severe abdominal pains ensue which are generally followed by loss of consciousness.

INHALATION (BREATHING) Highly irritating to respiratory tract. May cause inflammation of the lining of nose & throat. Bronchopneumonia may result.

SKIN (CONTACT AND ABSORPTION) Irritating and repeated contact causes hardening or tanning effect. Can cause dermatitis & sensitization.

EYE (CONTACT)

Irritating and lachrymating. Liquid causes severe burns to the eye.

CHRONIC EFFECTS OF EXPOSURE

Ongoing 2-year animal inhalation studies by the Chemical Industry Institute of Toxicology (CIIT) have indicated that formaldehyde is carcinogenic in rats.

EMERGENCY AND FIRST AID PROCEDURES

EYE (CONTACT) Flush with water for at least 15 minutes. Contact a physician immediately.

SKIN (CONTACT)

Wash area with large amounts of soap and water.

INGESTION (SWALLOWING) Induce vomiting immediately; give 2 glasses water & stick finger down throat. Contact a physician immediately.

INHALATION (BREATHING) Remove from contaminated area. If breathing has stopped, artificial respiration should be started. Contact a physician at once.

OTHER HEALTH HAZARDS Irritancy for both acute & chronic exposures. Effects are likely to be localized regardless of route of exposure.

NOTES TO PHYSICIAN

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Confine spill with dikes or fire wall. Formaldehyde can be neutralized with NH_4OH or complexed with sodium sulfite. Use of dilution water to wash the contaminated area should be closely controlled to minimize spill volume. Contaminated area should be thoroughly ventilated. Final wash with diluted ammonia solution will eliminate vapor. Advise authorities of spill.

WASTE DISPOSAL METHOD

Chemical incinerator; landfill.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE)

Use NIOSH approved organic vapor cartridge or canister respirator w/in use limitations of these devices; all other situations, self-contained breathing apparatus.

VENTILATION

- LOCAL EXHAUST
Preferable.
- MECHANICAL (GENERAL)
Acceptable.
- OTHER

PROTECTIVE GLOVES

Neoprene or rubber gloves.

EYE PROTECTION

Chemical safety goggles.

OTHER PROTECTIVE EQUIPMENT

Impervious apron and boots; eye bath and safety shower.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Small containers should be protected from physical damage. Detached storage is preferred. Indoor storage areas should be sloped toward a drain or retention area.

OTHER PRECAUTIONS

Warehouses should be equipped for maximum ventilation in case of leaks or spills.

The data in this Material Safety Data Sheet relates only to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as a warranty or representation for which Hydrite Chemical Co. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.