

MATERIAL SAFETY DATA SHEET.

UREA FORMALDEHYDE CONCENTRATE

SECTION I : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Urea Formaldehyde Concentrate

Synonym: UF-85

Empirical Formula: CH₂O Viscous solution
NH₂CONHCH₂OH

UN No: 2209

CAS#: UREA 57.13.6 25 %
FORMALDEHYDE 50.00.0 60 %

RTECS: Not available

Hazchem Code: 1Z

Contact Information:

Methanol Chemicals Company (CHEMANOL)

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SECTION II : COMPOSITION AND INFORMATION ON INGREDIENTS

Composition:

Name	CAS#	% by weight
Urea Formaldehyde	50.00.0	60 % HCHO and 25 % Urea

SECTION III : HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Flash Point: 79 deg C. Solutions of Formaldehyde in water are considered combustible as the flammable vapors escape and form explosive mixtures with air over a wide range. Harmful if inhaled. May cause allergic skin reaction. May be harmful if swallowed. Target Organs: Respiratory system, eyes and skin.

POTENTIAL HEALTH EFFECTS

Eye: Irritation of eyes, conjunctivitis, swelling of eye lids.

Skin: May cause dermatitis and skin sensitization

Ingestion: High formaldehyde content naturally results in toxicity similar to that of 50% formaldehyde solutions. Urea itself is not considered toxic, but large amounts taken internally have been known to be dangerous. The toxicity of formaldehyde being the dominant factor in UF-85 Concentrate

Inhalation: Irritation of nose and throat, coughing dyspnea and vomiting

SECTION IV : FIRST AID MEASURES

Eyes: Flush eyes with water. Don't rub the eyes.

Skin: Get under shower. Remove contaminated clothing and shoes.

Ingestion: If victim is unconscious and having convulsions do nothing except turn him on his side. If victim conscious give water to rinse mouth.

Inhalation: Remove patient from exposure and move to fresh air. If breathing has stopped give artificial respiration.

SECTION V : FIRE AND EXPLOSION DATA

General Information: Solutions of Formaldehyde in water are considered combustible as the flammable vapors escape and form explosive mixtures with air over a wide range.

Auto ignition Temperature: 430 deg C

Flash Point: 79 deg C (closed cup)

Flammable Limits, Lower: 7.00 vol. %

Flammable Limits, Upper: 73.00 vol. %

NFPA Rating (estimated) : Health: 3; Flammable: 2; Instability: 0

Extinguishing Media: For large fires, use water spray, fog or alcohol resistance foam. For small fires, use dry chemical, carbon dioxide.

SECTION VI : ACCIDENTAL RELEASE MEASURE

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

Spills/Leaks: Isolate the line. Cut off Ignition sources. Use water to cool and disperse vapor to protect personnel. Approach release from upwind. Soak large spill into sand and flush down spill site with large quantity of water. Report any release. It may be dangerous if it enters water intake. Do not walk through the spilled product.

SECTION VIII : HANDLING AND STORAGE

Storage containers: Steel tanks, HDPE drums (30,250 kgs) Road Tankers. Stainless steel (304, 316, and 405) or stainless clad steel is generally preferred for tanks.

Handling: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Wear suitable respiratory equipment in case of insufficient ventilation. Minimize dust generation and accumulation. Do not get on skin or in eyes. Do not ingest or inhale. UF-85 Concentrate should be handled with all the safety precautions normally taken with formaldehyde solutions.

Storage: Store in cool and dry well ventilated area. Keep away from acids, alkalis, amines and oxidizing agents. UF-85 is stable for at least six months under recommended storage conditions. At 55 °C (131 °F) viscosity will increase rapidly upon storage, for this reason, storage tanks should not be exposed to direct summer sunlight & should be shielded from the direct rays of sun. Cars and tanks containing UF-85 should be electrically grounded. Smoking is strictly prohibited in storage area.

SECTION VII : EXPOSURE CONTROL /PERSONAL PROTECTION

ENGINEERING CONTROLS: Reasonable care in handling this formaldehyde containing material is more effective in preventing dermatitis than. Protective creams, which cannot be solely depended upon. Skin exposed to Concentrate should be washed as soon as possible. Tanks should be cleaned from the outside whenever possible. Complete protective suits and safety goggles, face shields, airline respirators or gas masks should be worn When needed. Only experienced, reliable personnel should be given the responsibility of handling UF-85.

EXPOSURE LIMITS:

Ceiling limit : 0.1 ppm NIOSH
TLV : 0.3 ppm ACGIH

PERSONAL PROTECTIVE EQUIPMENT:

Eyes : Use of approved respiratory, goggles,

Skin: Suitable protective clothing and gloves is recommended. Use safety shoes when handling drums. UF-85 Concentrate should be handled with all the safety precautions normally taken with formaldehyde solutions. Gloves and aprons made of resistant materials should be worn by personnel handling UF-85, and adequate ventilation should be provided.

Respirators: Wear formaldehyde or organic vapor cartridge mask or self contained breathing apparatus.

SECTION IX : PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Water clear viscous solution

Odor: Pungent. (Slight.)

Taste: Not available.

Color: Water clear

pH of solution: 6-8

Boiling Point: About 100 deg C (212 deg F)

Viscosity: (300-500) C.P.S.

Specific Gravity/Density: 1.32 at 25 deg C (77 deg F)

Vapor Pressure: 10 mm Hg @ 25 deg C (77 deg F)

Evaporation rate: Negligible

Odor Threshold: 0.2 ppm

Solubility: soluble in water, methanol, ethanol

SECTION X : STABILITY AND REACTIVITY

Chemical Stability: Stable, more than 6 month after that viscosity will increase.

Conditions to Avoid: Keep away from ignition sources, strong acids oxidizing materials halogens, alkalis and amines.

Incompatibilities with Other Materials: May react with hydrochloric acid or other chloride ion to form bis chloro methyl ether (BCE). Reacts violently with oxidizing agents.

Hazardous Decomposition Products: Emits toxic vapors of formaldehyde when heated.

SECTION XI : TOXICOLOGICAL INFORMATION

RTECS: Not available.

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxic Effects:

SKIN: Causes severe skin irritation and possible burns. Repeated or prolonged skin contact may cause sensitization dermatitis.

EYE: Causes severe eye irritation and burns. May result in corneal injury.

INHALATION: Harmful if inhaled. May affect respiration (dyspnea), cause severe irritation of the upper respiratory tract with pain, burns, and inflammation of the lining of the nose, throat and lungs. May cause loss of smell, pulmonary edema and bronchopneumonia. Repeated or prolonged inhalation may cause asthma.

INGESTION: May be harmful if swallowed. May cause severe digestive tract irritation with inflammation of the mouth, throat and stomach, abdominal pain, nausea, vomiting, and diarrhea. Prolonged ingestion may affect the kidneys.

Available data indicate that formaldehyde do not produces mutagenic, teratogenic, embryo toxic or carcinogenic effects in man at concentrations which humans are exposed to or can tolerate. Moreover, UF-85 is completely non toxic.

Toxicity to Animals:

Acute oral toxicity (LD50): 42 mg/kg [Mouse]. (Formaldehyde)

Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit]. (Methyl alcohol).

Draize test, rabbit, skin: 2 mg/24H Severe; (Formaldehyde)

Inhalation, mouse (LC50):505 mg/m³/2H; (Formaldehyde)

Epidemiological studies and case reports indicate an excess occurrence of a number of cancers in rat, but evidence for involvement for formaldehyde is strongest for nasal and nasopharyngeal cancer.

Toxicity to Human (Chronic Effects):

Neurotoxicity: No information available.

Mutagenicity: Exposure to Formaldehyde may affect genetic material.

Carcinogenicity: -

ACGIH: A2 - Suspected Human Carcinogen

NTP: Suspect carcinogen

IARC: Group 2A (probable)

Epidemiology: Epidemiological studies demonstrate effects of occupational formaldehyde exposure on human.

Teratogenicity: Classified Possible for human [Formaldehyde].

Reproductive effects: (Formaldehyde): Studies produced a weak association (limited evidence) between adverse human female reproductive effects and occupational exposure.

Other Studies: (For Gaseous formaldehyde)

Irritation threshold in eyes, nose or throat	0.2 - 1.6 ppm
Stronger irritation of upper respiratory tract, coughing, lacrimation, extreme discomfort	3-6 ppm
Immediate dyspnea, burning in nose and throat, heavy coughing and lacrimation	10 – 20 ppm
Necrosis of mucous membranes, laryngospasm, pulmonary edema	> 50 ppm

SECTION XII: ECOLOGICAL INFORMATION

Ecotoxicity:

Biodegradable in soil and water. Dangerous to aquatic life in high concentrations. Dangerous if it enters water intakes. Notify local health official /report any release.

SECTION XIII : DISPOSAL CONSIDERATION

Waste must be disposed of in accordance with local environmental control regulations or USEPA guidelines using a registered waste disposal contractor.

SECTION XIV : TRANSPORT INFORMATION

Shipping Name: Urea Formaldehyde (UF-85),
Hazard Class: 8, Corrosive Liquid
UN Number: 2209
Packing Group: III
IMDG Code (Page No.) : 8176-1 Version 1994.
SPECIAL PROVISIONS FOR TRANSPORT : Not available

SECTION XV : REGULATORY INFORMATION

HMIS

Health Hazard: 3
Fire Hazard: 2
Reactivity: 0
Personal Protection: G

NATIONAL FIRE PROTECTION ASSOCIATION (U.S.A):

Health : 3
Flammability: 2
Reactivity: 0
Specific Hazard:

Protective Equipment:

Gloves.
Synthetic apron.
Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
Wear appropriate respirator when ventilation is inadequate.
Splash goggles.

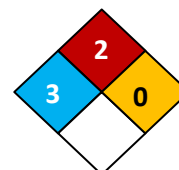
TSCA

CAS#: UREA	57.13.6	25 %
FORMALDEHYDE	50. 0.0	60%

Health & Safety Reporting List

None of the chemicals are on Health & Safety Reporting List under sec. 716.120 under US EPA

Health Hazard	3
Fire Hazard	2
Physical Hazard	0
Personal Protection	G



Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rules Section 12 b. or listed under TSCA section 12 b

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA : Hazardous substances & corresponding RQs

100 (As Formaldehyde solution)

SARA Section 302 Extremely Hazardous Substances

500 (As Formaldehyde solution)

SARA Section 313

X (As Formaldehyde solution)

RCRA

U122 (As Formaldehyde solution)

Clean Air Act:

CAS# 50.0.0 Formaldehyde Mentioned as Hazardous Air pollutants under Clean Air Act.

Clean Water Act:

CAS# 50.0.0 Formaldehyde is not listed as a 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 , 29 CFR 1910.119 App A

European Labeling in Accordance with EC Directives

Hazard Symbols: C

Risk Phrases:

R 7 - May cause fire.

R 8 - Contact with combustible material may cause fire.

R: 36/37/38 - Irritating to eyes Respiratory system and skin.

R 52 - Harmful to aquatic organisms.

Safety Phrases:

S24 Avoid contact with skin.

S 26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S61 Avoid release to the environment. Refer to special instructions/ safety data sheet

SECTION XVI : OTHER INFORMATION

References: ACGIH, TSCA, SARA, OSHA, NIOSH, NFPA, HMIS , EC Directives and available best information

Other Special considerations: Not available.

Last Updated: August 2014.

Information Contact: Technical Services Department.

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