

MATERIAL SAFETY DATA SHEET



ORNL INTERNAL USE ONLY

Formaldehyde, 37%

REC'D 00002

SECTION 1 . Product and Company Identification

Product Name and Synonym: Formaldehyde, 37%

DATE 10/17/2013

Product Code: F6025

Material Uses:

Manufacturer:

Aqua Solutions, Inc
6913 Hwy 225

Deer Park, TX 77536
(281) 479-2569

Entry Date : 3/28/2013

Print Date: 3/28/2013

24 Hour Emergency Assistance : Chemtrec 800-424-9300
Canutec 613-996-6666

Health:	3
Flammability:	2
Reactivity:	0

Hazard Rating:
Least Slight Moderate High Extreme
0 1 2 3 4

NA=Not Applicable NE=Not Established

SECTION 2 HAZARD IDENTIFICATION

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Physical state: Liquid

Odor: Pungent

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview:

DANGER!

POISON!

CAUSES EYE BURNS.

CANCER HAZARD

CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

HAMFUL IF INHALED OR ABSORBED THROUGH THE SKIN

CANNOT BE MADE NONPOISONOUS.

CAUSES RESPIRATORY TRACT AND SKIN IRRITATION.

MAY CAUSE SKIN BURNS.

CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:

MUCOUS MEMBRANES, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN,

EYES, LENS OR CORNEA, CENTRAL NERVOUS SYSTEM

VAPOR MAY CAUSE FLASH FIRE.

FLAMMABLE LIQUID AND VAPOR.

WARNING: this product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Do not ingest. Do not get in eyes or on skin or clothing.

Avoid breathing vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Risk of cancer depends on duration and level of exposure.

Routes of entry:

Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects:

Eyes: Corrosive to eyes.

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Skin: Toxic in contact with skin. Irritating to the skin. May cause skin burns.
Inhalation: Toxic by inhalation. Irritating respiratory system.
Ingestion: Very toxic if swallowed. May cause burns to mouth, throat and stomach.
Carcinogenicity: Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity/ Reproductive toxicity: No known significant effects or critical hazards

Medical conditions aggravated by over-exposure:
Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged exposure to contact with spray or mist may chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

SECTION 3 MIXTURE COMPONENTS

SARA 313	Component	CAS Number	Percent Comp.	Dimension	Exposure Limits
<input checked="" type="checkbox"/>	Formaldehyde	CAS# 50-00-0	35 - 38%	W/W	OSHA TWA 0.75 ppm(0.9mg/mf) , STEL 2 ppm(2.5mg/mf)
<input checked="" type="checkbox"/>	Methanol (Methyl Alcohol)	CAS# 67-56-1	10 - 15%	V/V	OSHA TWA 200 ppm, ACGIH STEL 250 ppm
<input type="checkbox"/>	Water, Deionized ASTM Type II	CAS# 7732-18-5	Balance	V/V	None Established

SECTION 4 FIRST AID MEASURES

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: CALL A PHYSICIAN. SKIN: In case of contact, immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES

Fire Extinguisher Type: Carbon Dioxide, dry chemical powder or appropriate foam
Fire / Explosion Hazards: Thermal decomposition produces highly toxic fumes.
Fire Fighting Procedure: Use water spray to cool fire exposed containers. Wear self-contained breathing apparatus and proper clothing to prevent contact with skin & clothing.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Absorb spill with inert material, then place in a chemical waste container. Ventilate and wash spill site. Dispose of in a manner consistent with federal, local law.

Personal precautions: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.

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Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up: If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

SECTION 7 HANDLING AND STORAGE

Store in a cool dry well ventilated area out of direct sunlight. Keep away from heat and flame. Do not get in eyes, on skin, or on clothing.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: NIOSH/MSHA-approved respirator

Ventilation

Local Exhaust

Mechanical

Protective Gloves: NIOSH Approved Gloves

Eye Protection: Goggles and Face Shield

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

Product name - United States -

Formaldehyde

ACGIH TLV (United States, 1/2005) Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. Refers to Appendix A - Carcinogens. 2000 Adoption

CEIL: 0.37 mg/m³ Form: All forms

CEIL: 0.3 ppm Form: All forms

NIOSH REL (United States, 12/2001). Notes: See Appendix A - NIOSH Potential Occupational Carcinogen

CEIL: 0.1 ppm 15 minute(s) Form: All forms

TWA: 0.016 ppm 10 hour(s) Form: All forms

OSHA PEL (United States, 8/1997)

STEL: 2 ppm 15 minute(s) Forms: All forms

TWA: 0.75 ppm 8 hour(s) Form: All forms

OSHA PEL 1989 (United States, 3/1989) Notes: See Table Z-2 for operations or sectors excluded from section 1910.1048 or for which limit(s) is(are) stayed. Sec. 1910.1048 Formaldehyde.

STEL: 2 ppm 15 minute(s) Forms: All forms

TWA: 0.75 ppm 8 hour(s) Form: All forms

OSHA PEL Z2 (United States, 8/1997) Notes: Sec. 1910.1048 Formaldehyde.

STEL: 2 ppm 15 minute(s) Forms: All forms

TWA: 0.75 ppm 8 hour(s) Form: All forms

Methanol

ACGIH (United States, 1994). Skin

TWA: 262 mg/m³

STEL: 328 mg/m³

OSHA (United States, 1989). Skin

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TWA: 260 mg/m³

STEL: 325 mg/m³

NIOSH REL (United States, 12/2001). Skin

STEL: 325 mg/m³ 15 minute(s). Form: All forms

STEL: 250 ppm 15 minute(s). Form: All forms

TWA: 260 mg/m³ 10 hour(s) Form: All forms

TWA: 200 ppm 10 hour(s) Form: All forms

OSHA PEL (United States, 8/1997).

TWA: 260 mg/m³ 8 hour(s) Form: All forms

TWA: 200 ppm 8 hour(s) Form: All forms

OSHA PEL 1989 (United States, 3/1989).

STEL: 325 mg/m³ 15 minute(s). Form: All forms

STEL: 250 ppm 15 minute(s). Form: All forms

TWA: 260 mg/m³ 8 hour(s) Form: All forms

TWA: 200 ppm 8 hour(s) Form: All forms

ACGIH TLV (United States, 1/2005). Skin notes: Substance for which there is a Biological Exposure Index or Indices

STEL: 325 mg/m³ 15 minute(s). Form: All forms

STEL: 250 ppm 15 minute(s). Form: All forms

TWA: 260 mg/m³ 8 hour(s) Form: All forms

TWA: 200 ppm 8 hour(s) Form: All forms

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Recommended: splash goggles, face shield

Skin: Personal protective equipment for the body should be selected based on the task being performed and risks involved and should be approved by a specialist before handling this product.

Body recommended:

safety apron

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Recommended: nitrile rubber

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Melting Point:	-118°C	Percent Volatile by Volume:	~100%
Boiling Point:	-3°F	Evaporation Rate	N/E
Vapor Pressure:	6.3 mm Hg @ 70°C	Evaporation Standard	N/A
Vapor Density:	1.03	Auto Ignition Temp	N/E
Solubility in Water:	Soluble	Lower Flamm. Limit in Air	7%
Appearance /Odors:	Clear liquid, strong odor	Upper Flamm. Limit in Air	73%
Flash Point:	56°C		
Specific Gravity:	1.083		

SECTION 10 STABILITY AND REACTIVITY INFORMATION

Stability:	Stable
Conditions to Avoid:	Avoid contact with incompatible materials.
Materials to Avoid:	
Hazardous Decomposition Products:	Toxic fumes of: Carbon Monoxide, Carbon Dioxide
Hazardous polymerization:	Will Not Occur
Conditions to Avoid:	None known

SECTION 11 Toxicological Information

Toxicity data- United States- Product/ ingredient name:

Formaldehyde

LD50	100 mg/kg	Oral	Rat
LD50	42 mg/kg	Oral	Mouse
LD50	260 mg/kg	Oral	Guinea pig
LDLo	108 mg/kg	Oral	woman
LDLo	108 mg/kg	Oral	woman

Methanol

LD50	5628 mg/kg	Oral	Rat
LD50	14200 mg/kg	Oral	Rabbit
LD50	7300 mg/kg	Oral	Mouse
LD50	15800 mg/kg	Dermal	Rabbit
LDLo	143 mg/kg	Oral	Human
LDLo	428 mg/kg	Oral	Human
LDLo	6422 mg/kg	Oral	Man
LDLo	393 mg/kg	Dermal	Monkey
LD50	64000 ppm (4 hours)	Inhalation	Rat

Chronic effects on humans: CARCINOGENIC EFFECTS Classified 1 (Proven for humans.) by IARC, + (Proven.) by OSHA [Formaldehyde]. Classified 3 (Possible for humans.) by European Union [Formaldehyde]. Classified A2 (Suspected for humans.) by ACGIH, 2 (Reasonably anticipated to be human carcinogens.) by NTP [Formaldehyde].

Contains material which causes damage to the following organs: mucous membranes, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Other toxic effects on humans: Extremely hazardous in case of ingestion. Very hazardous in case of skin contact (permeator), of inhalation (lung irritant, lung sensitizer). Hazardous in case of skin contact (corrosive, sensitizer), of eye contact (corrosive), of inhalation (lung corrosive).

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Specific effects

Carcinogenic effects: Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenic effects: No known significant effects or critical hazards

Teratogenicity/Reproductive toxicity: No known significant effects or critical hazards

Sensitization

Ingestion: May cause burns to mouth, throat and stomach.

Inhalation: Irritating to respiratory system.

Eyes: Corrosive to eyes.

Skin: Irritating to the skin. May cause skin burns.

SECTION 12 Ecological Information

Ecotoxicity data

United States

Product/ ingredient name:

Formaldehyde

Daphnia pulex (EC50) 48 hour(s) 5.8 mg/l

Daphnia magna (EC50) 48 hour(s) 14mg/l

Daphnia magna (EC50) 48 hour(s) 14.6 mg/l

Oncorhynchus mykiss (LC50) 96 hour(s) 1.41 mg/l

Lepomis macrochirus (LC50) 96 hour(s) 1.51 mg/l

Lepomis macrochirus (LC50) 96 hour(s) 1.79 mg/l

Methanol

Daphnia magna (EC50) 48 hour(s) >10000 mg/l

Oncorhynchus mykiss (LC50) 48 hour(s) 13200 mg/l

Lepomis macrochirus (LC50) 48 hour(s) 16000 mg/l

Daphnia magna (EC50) 96 hour(s) >100 mg/l

Pimephales promelas (LC50) 96 hour(s) >100 mg/l

Lepomis macrochirus (LC50) 96 hour(s) 15400 mg/l

Environmental precautions: No known significant effects or critical hazards.

Products of degradation: These products are carbon oxides (CO, CO₂) and water.

Toxicity of the products of biodegradation: The products of degradation are less toxic than the product itself.

SECTION 13 Disposal Considerations

Waste disposal: the generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

SECTION 14 Transport Information

DOT Classification: Formaldehyde Solution, 3, (8), UN1198, PG III

DOT Regulations may change from time to time. Please consult the most recent D.O.T. regulations.

SECTION 15 Regulatory Information

United States

HCS Classification:

Target organ effects

Highly toxic material

Corrosive material

Carcinogen

Combustible liquid

U.S. Federal regulations:

United States inventory (TSCA 8b): listed

TSCA (Toxic Substance Control Act): This product is listed on the TSCA inventory.

SARA 302/304/311/312 extremely hazardous substances: Formaldehyde

SARA 302/304 emergency planning and notifications: Formaldehyde

SARA 302/304/311/312 hazardous chemicals: Methanol; Formaldehyde

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SARA 311/312 MSDS distribution- Chemical inventory- hazard identification: Methanol
Fire Hazard: Immediate (acute) health hazard, Delayed (chronic) health hazard
Formaldehyde. Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Formaldehyde
Clean Air Act (CAA) 112 accidental release prevention: Formaldehyde
Clean Air Act (CAA) 112 regulated flammable substance: No products were found.
Clean Air Act (CAA) 112 regulated toxic substance: Formaldehyde

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations:

Pennsylvania RTK: Methanol
(environmental hazard, generic environmental hazard); Formaldehyde (special hazard, environmental hazard, generic environmental hazard);
Massachusetts RTK: Methanol; Formaldehyde
New Jersey: Methanol; Formaldehyde

California Prop. 65

WARNING: this product contains a chemical known to the State of California to cause cancer.

Ingredient name: Methanol; Formaldehyde

Cancer: Yes Reproductive: No No significant risk level: Yes Maximum acceptable dosage level: No

Canada

WHMIS (Canada) :

Class B-3: Combustible liquid with a flash point between 37.8 C (100 F) and 93.3 C (200 F)

Class D-1A: Material causing immediate and serious toxic effects (Very toxic)

Class D-2A: Material causing other toxic effects (Very toxic).

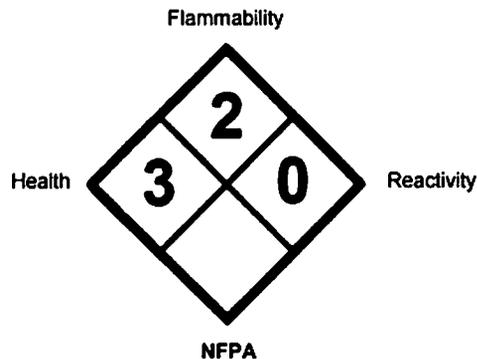
Class D-2B: Material causing other toxic effects (Toxic).

Class E: Corrosive material

CEPA DSL/ CEPA NDSL : CEPA DSL: Methanol; Formaldehyde

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

SECTION 16 Additional Information



Revisions

2.1

The information herein is believed to be accurate and is offered in good faith for the user's consideration and investigation. No warranty either expressed or implied is made for the completeness or accuracy of the information whether originating from the above mentioned company or not. Users of this material should satisfy themselves by independent investigation of current scientific and medical knowledge that the material can be used safely.