

Formaldehyde 37% w/w**SECTION 1. IDENTIFICATION**

Product Identifier	Formaldehyde 37% w/w
Other Means of Identification	Formic Aldehyde, Formalin, Formaldehyde 37% w/w (in 5.0 - 15.0 % w/w methanol)
Product Code(s)	FO2109, FO2110, FO2120
Product Family	Organic solution
Recommended Use	Laboratory.
Restrictions on Use	None known.
Supplier Identifier	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
Emergency Phone No.	CANUTEC CANADA, 613-996-6666, 24 Hours
SDS No.	0241

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Flammable liquid - Category 3; Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 3; Acute toxicity (Inhalation) - Category 2; Skin corrosion - Category 1A; Serious eye damage - Category 1; Carcinogenicity - Category 1A

Label Elements

Signal Word:
Danger

Hazard Statement(s):

Flammable liquid and vapour.
Toxic if swallowed or if inhaled.
Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
Causes damage to organs.
May cause respiratory irritation.

Precautionary Statement(s):

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Do not get in eyes, on skin, or on clothing.
 Wash hands and skin thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 IF ON SKIN: Wash with plenty of water/
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
Other Hazards
 None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Water	7732-18-5	52 - 63	Dihydrogen Oxide
Formaldehyde solution	50-00-0	32 - 33	Formic Aldehyde, Formalin
Methanol	67-56-1	5.0 - 15.0	Methyl Alcohol

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. DO NOT move about unnecessarily. Symptoms of pulmonary edema may be delayed.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Immediately rinse skin with lukewarm, gently flowing water for at least 30 minutes. DO NOT INTERRUPT FLUSHING. If it can be done safely, continue flushing during transport to hospital.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, continue flushing during transport to hospital. Take care not to rinse contaminated water into the unaffected eye or onto the face.

Ingestion

Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Rinse mouth with water. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Immediately call a Poison Centre or doctor. Specific treatment is required.

First-aid Comments

Some of the first-aid procedures recommended here require advanced first-aid training. If exposed or concerned, get medical advice or attention.

Most Important Symptoms and Effects, Acute and Delayed

If inhaled and/or on skin: can cause severe irritation of the nose and throat. May burn the skin. Permanent scarring may result. If in eyes: contact causes severe burns with redness, swelling, pain and blurred vision. Permanent damage including blindness can result.

Immediate Medical Attention and Special Treatment

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Special Instructions

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Unsuitable Extinguishing Media

Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific Hazards Arising from the Product

May travel a considerable distance to a source of ignition and flash back to a leak or open container. Closed containers may rupture violently when heated releasing contents.

Very toxic carbon monoxide, carbon dioxide; very toxic, flammable formaldehyde.

Special Protective Equipment and Precautions for Fire-fighters

Use extreme caution. Evacuate area. Fight fire from a protected, explosion-resistant location or maximum distance possible. Approach fire from upwind to avoid hazardous vapours or gases. Knock down vapours or gases with water fog or fine water spray. Dike and recover contaminated water for appropriate disposal.

Fire-fighters should enter area wearing specialized protective equipment. (Bunker Gear will not provide adequate protection.) a full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources if safe to do so. Remove or isolate incompatible materials as well as other hazardous materials.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: stop or reduce leak if safe to do so. Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product. Flush spill area. Dike and recover contaminated water for appropriate disposal. Large spills or leaks: contact emergency services and manufacturer/supplier for advice.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment to avoid direct contact with this chemical. Prevent accidental contact with incompatible chemicals. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). Only use where there is adequate ventilation. Do not get in eyes, on skin or on clothing. Avoid breathing in this product. Avoid generating vapours or mists. Keep containers tightly closed when not in use or empty.

Conditions for Safe Storage

Store in an area that is: dry, well-ventilated, out of direct sunlight and away from heat and ignition sources, separate from incompatible materials (see Section 10: Stability and Reactivity), an approved, fire-resistant area, secure and separate from work areas. Restrict access to authorized personnel only. Keep amount in storage to a minimum.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Formaldehyde solution		0.3 ppm	0.75 ppm			
Water	Not established		Not established			
Methanol	200 ppm	250 ppm				

Water:

Exposure guidelines (both ACGIH and OSHA) for water not established.

Formaldehyde solution:

ACGIH® = American Conference of Governmental Industrial Hygienists. OSHA = US Occupational Safety and Health Administration.

TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit.

Methanol:

Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Exhaust directly to the outside, taking any necessary precautions for environmental protection. For large scale use of this product: use an automatic leak detection system.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Suitable materials are: butyl rubber, nitrile rubber, Viton®, Viton®/butyl rubber, Barrier® (PE/PA/PE), Silver Shield/4H® (PE/EVAL/PE), Trellchem® HPS, Trellchem® VPS, Tychem® BR/LV, Tychem® Responder.

The following materials should NOT be used: natural rubber, polyvinyl alcohol.

Respiratory Protection

Wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Cloudy colourless liquid.
Odour	Pungent
Odour Threshold	Not available
pH	2.8 - 4.0
Melting Point/Freezing Point	-15 °C (5 °F) (melting); 0 °C (32 °F) (freezing)
Initial Boiling Point/Range	90 - 100 °C (194 - 212 °F)
Flash Point	64 - 77 °C (147 - 171 °F)
Evaporation Rate	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	0.17 kPa
Vapour Density (air = 1)	0.62 - 1.16
Relative Density (water = 1)	Not available
Solubility	Not available in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not applicable

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Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)
Other Information	
Physical State	Liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

None known.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Alcohols (e.g. ethanol), strong acids (e.g. hydrochloric acid), strong bases (e.g. sodium hydroxide), amines (e.g. triethylamine), oxidizing agents (e.g. peroxides), reducing agents (e.g. hydroquinone).

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Formaldehyde solution	368 ppm (male mouse) (4-hour exposure)	800 mg/kg (male rat)	~ 300 mg/kg (rabbit)
Water	Not available	> 89840 mg/kg (rat)	Not available
Methanol	64,000 ppm (rat) (4-hour exposure)	5,628 mg/kg (rat)	15,800 mg/kg (rabbit)

Skin Corrosion/Irritation

May burn the skin. Permanent scarring may result.

Serious Eye Damage/Irritation

May irritate or burn the eyes. Permanent damage including blindness may result.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause severe nose and throat irritation.

Skin Absorption

No information was located.

Ingestion

Very toxic, can cause death Permanent damage can result. Symptoms may include nausea, vomiting, stomach cramps and diarrhea.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause areas of skin to darken, skin to harden. Symptoms may include dry, red, cracked skin (dermatitis). Symptoms can include redness, rash, swelling and itching.

Respiratory and/or Skin Sensitization

May cause an allergic reaction (skin sensitization) based on limited evidence.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Formaldehyde solution	Group 1		Known carcinogen	
Water	Not Listed	Not Listed	Not Listed	Not Listed
Methanol	Group 2B	A3		

IARC: Group 1 – Carcinogenic to humans.

Group 2B – Possibly carcinogenic to humans. ACGIH®: A3 – Confirmed animal carcinogen.

Reproductive Toxicity**Development of Offspring**

Conclusions cannot be drawn from the limited studies available. Not known to harm the unborn child.

Sexual Function and Fertility

Conclusions cannot be drawn from the limited studies available.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Animal studies show evidence of mutagenicity in reproductive cells (sperm or egg).

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal Methods**

Dispose of contents and container in accordance with local, regional, national and international regulations.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN2209	Formaldehyde Solution	8	III
US DOT	UN2209	Formaldehyde Solution	8	III

Environmental Hazards Not applicable

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION**Safety, Health and Environmental Regulations**

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Canada**Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)**

Listed on the DSL.

USA**Toxic Substances Control Act (TSCA) Section 8(b)**

Listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

NFPA Rating	Health - 3	Flammability - 2	Instability - 0
SDS Prepared By	Alphachem Limited		
Phone No.	(905)-821-2995		
Date of Preparation	November 27, 2015		
Date of Last Revision	May 20, 2016		
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).		
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