SAFETY DATA SHEET

PRODUCT NAME: Formalin 37%

Issue Date: September 22

IDENTIFICATION

Product Name: Formalin 37%
Other Names: Formaldehyde, Methaldehyde, Methylaldehyde, Methylene oxide
Product Code: CF20, ZFORMA
Uses: Sterilant, preservative, embalming fluid
Supplier: HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton
Phone: 079744971 Web: www.hamchem.co.nz Email: info@hamchem.nz

- **In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.**
- **In case of poisoning phone National Poisons Centre – 0800 764 766**

HAZARD IDENTIFICATION

GHS Classifications
Flammable Liquid – Category 4
Acute Toxicity (Oral) – Category 3
Acute Toxicity (Dermal) – Category 3
Acute Toxicity (Inhalation) Category 2
Skin Corrosion – Category 1C
Serious Eye Damage – Category 1
Skin Sensitisation – Category 1
Germ Cell Mutagenicity – Category 2
Carcinogenicity – Category 1
Specific Target Organ Toxicity (Repeated Exposure) – Category 2

Signal Word: DANGER

Hazard Statements:
H227 – Combustible liquid
H301 – Toxic if swallowed
H311 – Toxic in contact with skin
H314 – Causes severe skin burns and serious eye damage
H330 – Fatal if inhaled
H341 – Suspected of causing genetic defects
H350 – May cause cancer
H373 – May cause damage to organs through prolonged or repeated exposure

Prevention
P201 – Obtain special instructions before use
P202 – Do not handle until all safety precautions have been read and understood
P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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HamChem Ltd, 75 Ruffell Road, Hamilton, New Zealand. Phone: 07-974-4971 Email: info@hamchem.nz Web: www.hamchem.nz

P260 – Do not breathe dust/fume/gas/mist/vapours/spray
P264 – Wash hands thoroughly after handling
P270 – Do not eat, drink or smoke when using this product.
P271 – Use only outdoors or in a well-ventilated area
P284 – In case of inadequate ventilation, wear respiratory protection
P272 – Contaminated work clothing should not be allowed out of the workplace
P280 – Wear protective gloves/clothing and eye/face protection

Response
P301+P310 – IF SWALLOWED: Immediately call a POISON CENTRE or Doctor. Rinse mouth, do NOT induce vomiting.
P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower). Immediately call a POISON CENTRE or Doctor. Continue rinsing until advised to stop by POISON CENTRE or Doctor.
P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 – Immediately call a POISON CENTRE or Doctor.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing
P310 – Immediately call a POISON CENTRE or Doctor.
P308+P313 – If exposed or concerned: Get medical advice/attention
P314 – Get medical attention/advice if you feel unwell
P363 – Wash contaminated clothing before re-use
P370 + P378 – In case of fire: Use alcohol-resistant foam to extinguish.

Storage
P403+P233 – Store in a well-ventilated place. Keep container tightly closed
P405 – Store locked up

Disposal
P501 – Dispose of contents/container to approved waste facility in accordance with local regulations.

COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Formaldehyde	50-00-0	37-43
Methanol	67-56-1	≤10
Formic Acid	64-18-6	≤0.05
Water	7732-18-5	Balance

FIRST AID MEASURES

If swallowed: Immediately contact POISON CENTRE on 0800 POISON (0800 764 766) or a Doctor immediately. If swallowed DO NOT induce vomiting. Rinse mouth. If vomiting occurs, place victim on left hand side with head down to prevent aspiration of vomit

If on skin: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Immediately seek medical attention. Continue flushing with water until advised to stop by POISON CENTRE or a Doctor.

If inhaled: If inhaled, remove person from contaminated area to fresh air and keep at rest in a comfortable breathing position. Immediately call a POISON CENTRE or Doctor for advice.

If in eyes: If in eyes, hold eyelids apart and flush continuously with running water. Immediately seek medical attention. Continue flushing until advised to stop by POISON CENTRE or Doctor.

Advice to Doctor: Inhalation my cause lung oedema. Ingestion causes severe corrosion of the gastro-intestinal tract and systemic effects. Inflammation and ulceration may progress to strictures. Severe

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acidosis results from rapid conversion of formaldehyde to formic acid. Coma, hypotension, renal failure and apnoea complete ingestion. Reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept for medical observation even if no symptoms are (yet) manifested.

FIRE FIGHTING MEASURES

Extinguishing media: Alcohol foam, carbon dioxide or dry chemical.

Specific hazards: Combustible liquid. At elevated temperatures, vapours may form an explosive mixture in air which can be ignited by many sources such as pilot lights, open flames, electrical motors, switches and static electricity. Vapour is heavier than air and may flow along surfaces to distant ignition source and flashback.

Fire-fighting advice: On burning will emit toxic fumes, including those of oxides of carbon. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from path of fire. Keep containers cool with water spray. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

ACCIDENTAL RELEASE MEASURES

Methods & Materials for Containment and Clean-Up: Contain spills and clean up using sand, soil or vermiculite or other inert absorbent material. Rags are not recommended. Collect and seal in appropriately labelled containers or drums for disposal.

Personal Protection: Wear protective equipment to prevent skin and eye contamination and the possible inhalation of vapour. Work upwind or increase ventilation. Clear area of unprotected personnel. Shut off all possible sources of ignition. In the event of spillage notify appropriate agencies.

Environmental Precautions: Prevent from entering soil, drains and waterways. Notify appropriate agencies if contamination of drains, waterways or soil has occurred.

HANDLING & STORAGE

Procedure for handling: DO NOT allow clothing wet with material to stay in contact with skin. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture.

Suitable container: Lined metal can, lined metal pail/can, plastic pail, polyliner drum. For low viscosity materials: drums and jerry cans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure.

Storage requirements: Store in original containers. Keep containers securely sealed. Store in a cool, dry well-ventilated area. Store away from incompatible materials and foodstuff containers.

EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure standards:
New Zealand Workplace Standards (WES)

Substance	CAS #	TWA		STEL	
Formaldehyde	50-00-0	0.3ppm		0.6ppm	
Methanol	67-56-1	200ppm	262mg/m^3	250ppm	328mg/m^3

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Engineering controls: Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. If inhalation risk exists: Use local exhaust ventilation or while wearing organic vapour respirator or air supplied mask. Keep containers closed when not in use.

Personal protective equipment: Wear overalls, full face shield, elbow-length impervious gloves, splash apron and rubber boots. Use with adequate ventilation. If inhalation risk exists, wear air-supplied mask or air- hood meeting the requirements of NZS 1715 and NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re use.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Liquid
Colour	Colourless
Odour	Pungent
Decomposition Temperature	Not available
Melting Point	Not available
Boiling Point	96 - 100°C
Solubility in water	Miscible
Specific Gravity	1.08-1.14
pH	2.4 – 4.0
Vapour Pressure	Not available
Vapour Density (Air = 1)	Not available
Evaporation Rate	Not available
Volatile Component	<10% Methanol
Flash point	>60 - 85°C (open cup)
Auto-Ignition Temperature	395 - 423°C
Flammability Limits – Lower	Not available
Flammability Limits – Upper	Not available
Molecular Weight	Not available

STABILITY & REACTIVITY

Stability: Incompatible with oxidizing agents. At elevated temperatures, oxidation of formaldehyde produces formic acid.

Hazardous decomposition products: May from carbon dioxide, carbon monoxide, and formaldehyde when heated to decomposition.

Hazardous polymerization: Trioxymethylene precipitate can be formed on long standing at very low temperatures. Nonhazardous polymerization may occur at low temperatures, forming paraformaldehyde, a white solid.

Incompatibles: Incompatible with oxidizing agents and alkalis. Reacts explosively with nitrogen dioxide at ca 180ºc. Reacts violently with perchloric acid, perchloric acid-aniline mixtures, and nitromethane. Reaction with hydrochloric acid may form bis-chloromethyl ether, an OSHA regulated carcinogen.

Conditions to avoid: Heat, flames, ignition sources and incompatibles.

TOXICOLOGICAL INFORMATION

Toxicology Information: Direct contact may produce carcinogenic or mutagenic effects.

Ingestion: If swallowed toxic effects may result from accidental ingestion and may be fatal or produce serious damage to the health of the individual.

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Inhalation: Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation.

Skin: Skin contact with the material may produce toxic effects; systemic effects may result following absorption.

Eye: Corrosive to eyes. Can cause chemical burns following direct contact. Vapours and mists may be extremely irritating.

Skin Corrosion/Irritation: The material may produce severe skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (non-allergic). This form of dermatitis is often characterized by skin redness (erythema) thickening of the epidermis.

Serious Eye Damage/Irritation: May produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

STOT-repeated exposure: Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Chronic Effects: May product carcinogenic or mutagenic effects. In respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. Although excess occurrence of cancers has been reported in humans, the evidence for possible involvement of Formaldehyde is strongest for nasal and nasopharangeal cancer. Asthma-like symptoms may continue for months or even years after exposure to material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Practical

experience shows that skin contact with the materials is capable either of inducing a sensitization reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals. Limited evidence suggests that repeated or long-term exposure may produce cumulative health effects involving organs or biochemical systems. Chronic exposure to formic acid may produce nausea and albumin or blood in the urine. Long term exposure to methanol vapour, at concentration exceeding 3000ppm, may produce cumulative effects characterized by gastrointestinal disturbances (nausea, vomiting), headache, ringing in the ears, insomnia, unsteady gait, vertigo, conjunctivitis and clouded or double vision. Liver and/or kidney injury may also result.

Toxicity data:

Oral LD50 (rat):	100mg/kg
Inhalation LC50 (rat):	203mg/m^3
Skin: Severe irritant (rabbit)	
Eye: Severe irritant (rabbit)	

ECOLOGICAL INFORMATION

Ecotoxicity:
Component: Formaldehyde (50-00-0)
LC50, Fish: 6.18mg/L (96H)
EC50, Crustacea: 5.8mg/L (48H)
EC50, Algae: 5.67mg/L (72H)

Persistance/Degradability: Substance is readily biodegradable (Formaldehyde). Methanol is readily degradable under both aerobic and anaerobic conditions.

Mobility: No information available

Environmental Fate: Toxic to aquatic life. Avoid release to the environment.

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Bioaccumulation Potential: Low potential for bioaccumulation (Formaldehyde). Methanol does not significantly bioaccumulate in fish.

Environmental Impact: No data available.

DISPOSAL CONSIDERATIONS

Dispose of contents/container to an approved waste facility in accordance with local/regional/national regulations.

TRANSPORT INFORMATION

UN Number:	2209
Proper Shipping name:	Formaldehyde Solution with not less than 25% formaldehyde
Dangerous Goods Class:	8 - Corrosive
Packing group:	III
Hazchem Code:	2X

REGULATORY INFORMATION

HSNO Classifications: 3.1D, 6.1C (O&D), 6.1B (I), 8.2C, 8.3A, 6.5B, 6.6B, 6.7A, 6.9B
EPA Approval #: HSR001518 – Formaldehyde, >25% aqueous solution, with <10% methanol

OTHER INFORMATION

NOTE: Formalin is a tracked substance. Formalin can only be brought by a certified handler and must be transferred to premises that have a location test certificate for Formalin or otherwise stored in a secure location.

End of SDS.

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