

SAFETY DATA SHEET

New Zealand

Section 1. Identification

Product name

Formaldehyde 37%; part of 'Silver Staining Kit, Protein'

Catalogue Number

17-1150-01



Other means of identification

Not available.

Product type

Liquid.

Identified uses

Analytical chemistry.
Use in laboratories
Scientific research and development

Supplier

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Person who prepared the MSDS :

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Emergency telephone number (with hours of operation)

0800 733 893
(10am - 7pm)

Section 2. Hazards identification

HSNO Classification

3.1 - FLAMMABLE LIQUIDS - Category D
6.1 - ACUTE TOXICITY (oral) - Category C
6.1 - ACUTE TOXICITY (dermal) - Category C
6.1 - ACUTE TOXICITY (inhalation) - Category B
8.2 - CORROSIVE TO DERMAL TISSUE - Category C
6.5 - SENSITIZATION - Category B (Skin)
6.6 - MUTAGENICITY - Category B
6.7 - CARCINOGENICITY - Category A
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE) - Category B
9.1 - AQUATIC ECOTOXICITY - Category D
9.2 - SOIL ECOTOXICITY - Category A
9.3 - TERRESTRIAL VERTEBRATE ECOTOXICITY - Category B

This material is classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 and has been classified according to the Hazardous Substances (Classifications) Regulations 2001.

GHS label elements

Signal word

Danger

Hazard statements

Combustible liquid.
Fatal if inhaled.
Toxic if swallowed.
Toxic in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause cancer.
Suspected of causing genetic defects.
May cause damage to organs.
Harmful to aquatic life.
Very toxic to the soil environment.
Toxic to terrestrial vertebrates.

Precautionary statements



Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Wear respiratory protection. Keep away from flames and hot surfaces. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response	Collect spillage. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash with plenty of soap and water. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/attention.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Symbol	



Other hazards which do not result in classification None known.

Section 3. Composition/information on ingredients

Substance/mixture	Mixture
Other means of identification	Not available.
CAS number/other identifiers	
CAS number	Not applicable.
EC number	200-001-8
Product code	17-1150-01

Ingredient name	%	CAS number
Formaldehyde, solution	37	50-00-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Inhalation	Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Ingestion	Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation	Fatal if inhaled.
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Ingestion	Toxic if swallowed.
Skin contact	Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
<u>Over-exposure signs/symptoms</u>	
Inhalation	No specific data.
Ingestion	Adverse symptoms may include the following: stomach pains
Skin	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eyes	Adverse symptoms may include the following: pain watering redness

Indication of immediate medical attention and special treatment needed, if necessary

Specific treatments	Not available.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures**Extinguishing media**

Suitable	Use dry chemical, CO ₂ , water spray (fog) or foam.
Not suitable	Do not use water jet.
Specific hazards arising from the chemical	Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Hazchem code	Not available.
Special precautions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Environmental precautions	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.



Section 7. Handling and storage

Precautions for safe handling

Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name

Formaldehyde, solution

Exposure limits

NZ HSWA 2015 (New Zealand, 11/2018). Skin sensitiser. Notes: New Zealand variation.

WES-Ceiling: 1 ppm

NZ HSWA 2015 (New Zealand, 11/2018). Skin sensitiser.

WES-TWA: 0.33 ppm 12 hours.

Appropriate engineering controls

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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

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.

Hand protection

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Eye protection

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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

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



Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Colour	Colourless.
Odour	Pungent. Suffocating.
Odour threshold	Not available.
pH	Not available.
Melting point	<15°C (<59°F)
Boiling point	93 to 96°C (199.4 to 204.8°F)
Flash point	Closed cup: 84°C (183.2°F)
Burning rate	Not applicable.
Burning time	Not applicable.
Evaporation rate	>1 (butyl acetate = 1)
Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Lower: 7% Upper: 73%
Vapour pressure	2.3 kPa (17.2 mm Hg) [room temperature]
Vapour density	1 [Air = 1]
Relative density	Not available.
Solubility	Easily soluble in the following materials: cold water, hot water, diethyl ether and acetone.
Solubility in water	Not available.
Partition coefficient: n-octanol/ water	Not available.
Auto-ignition temperature	423.9°C (795°F)
Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Not available.
Flow time (ISO 2431)	Not available.

Aerosol product

Type of aerosol	Not applicable.
Heat of combustion	Not available.
Ignition distance	Not applicable.
Enclosed space ignition - Time equivalent	Not applicable.
Enclosed space ignition - Deflagration density	Not applicable.
Flame height	Not applicable.
Flame duration	Not applicable.

Section 10. Stability and reactivity

Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.



Section 11. Toxicological information

Information on likely routes of exposure

Inhalation	Fatal if inhaled.
Ingestion	Toxic if swallowed.
Skin contact	Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	No specific data.
Ingestion	Adverse symptoms may include the following: stomach pains
Skin contact	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eye contact	Adverse symptoms may include the following: pain watering redness

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Formaldehyde, solution	LD50 Dermal	Rabbit	270 mg/kg	-
	LD50 Oral	Rat	100 mg/kg	-

Conclusion/Summary Toxic by inhalation, in contact with skin and if swallowed.

Irritation/Corrosion

Not available.

Conclusion/Summary

Skin	Toxic in contact with skin.
Eyes	Corrosive to eyes.
Respiratory	Toxic if inhaled.

Sensitisation

Not available.

Conclusion/Summary

Skin	May cause an allergic skin reaction.
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Potential chronic health effects

General	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.
Skin contact	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Eye contact	No known significant effects or critical hazards.
Carcinogenicity	May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	Suspected of causing genetic defects.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Conclusion/Summary	May cause cancer.
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Mutagenicity

Not available.



Conclusion/Summary Suspected of causing genetic defects.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Specific target organ toxicity

Name	Category	Route of exposure	Target organs
Formaldehyde, solution	Category B	Oral Inhalation	Not determined Not determined

Aspiration hazard

Not available.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	270.27 mg/kg
Dermal	729.73 mg/kg
Inhalation (dusts and mists)	0.14 mg/l

Other information Adverse symptoms include the following: allergic reaction

Section 12. Ecological information

Ecotoxicity This material is harmful to aquatic life.

Aquatic and terrestrial toxicity

Product/ingredient name	Result	Species	Exposure
Formaldehyde, solution	Acute EC50 3.48 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 3.05 mg/l Marine water	Algae - Isochrysis galbana - Exponential growth phase	96 hours
	Acute EC50 12.98 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute EC50 5800 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 1.41 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 0.005 mg/l Marine water	Algae - Isochrysis galbana - Exponential growth phase	96 hours
	Chronic NOEC 953.9 ppm Fresh water	Fish - Oncorhynchus tshawytscha - Egg	43 days

Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Formaldehyde, solution	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Formaldehyde, solution	0.35	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Other adverse effects No known significant effects or critical hazards.




Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.



Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
New Zealand Class	UN2209	FORMALDEHYDE SOLUTION	8	III
		- No.		
IATA Class	UN2209	FORMALDEHYDE SOLUTION	8	III
		The environmentally hazardous substance mark may appear if required by other transportation regulations. No.		
IMDG Class	UN2209	FORMALDEHYDE SOLUTION	8	III
		- No.		

PG* : Packing group

Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according to Annex II of Marpol and the IBC Code	Not available.

Section 15. Regulatory information

HSNO Approval Number	HSR002596
HSNO Group Standard	Laboratory Chemicals and Reagent Kits
HSNO Classification	3.1 - FLAMMABLE LIQUIDS - Category D 6.1 - ACUTE TOXICITY (oral) - Category C 6.1 - ACUTE TOXICITY (dermal) - Category C 6.1 - ACUTE TOXICITY (inhalation) - Category B 8.2 - CORROSIVE TO DERMAL TISSUE - Category C 6.5 - SENSITIZATION - Category B (Skin) 6.6 - MUTAGENICITY - Category B 6.7 - CARCINOGENICITY - Category A 6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE) - Category B 9.1 - AQUATIC ECOTOXICITY - Category D 9.2 - SOIL ECOTOXICITY - Category A 9.3 - TERRESTRIAL VERTEBRATE ECOTOXICITY - Category B

International regulationsChemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

New Zealand	All components are listed or exempted.
Australia	All components are listed or exempted.
Europe	All components are listed or exempted.
United States	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China	All components are listed or exempted.



Japan	Japan inventory (ENCS): All components are listed or exempted.
	Japan inventory (ISHL): Not determined.
Malaysia	All components are listed or exempted.

Section 16. Other information

History

Date of printing	2 April 2020
Date of issue/ Date of revision	02 April 2020
Date of previous issue	11/1/2019
Version	9

Key to abbreviations

ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
UN = United Nations

References

Not available.

▀ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

