

## Safety Data Sheet NEUTRAL BUFFERED FORMALIN

SDS no. NLRZR28E • Version 1.2 • Date of issue: 2023-06-29

### SECTION 1: Identification

#### GHS Product identifier

Product name NEUTRAL BUFFERED FORMALIN

#### Other means of identification

Description	Item Code
Formaldehyde Solution 4% Neutral buffered	0890/2L
Formaldehyde Solution 10% Neutral Buffered	1258/
Formaldehyde Solution 10% Neutral Buffered	2912/
Formaldehyde Solution 5%	5012/
Neutral Buffered Formalin 10%	961-
Formalin 10% (formaldehyde 4%)	AF4
Neutral Buffered Formalin Jar	ANBFB.
Neutral Buffered Formalin 10% Clear	ANBFC-
Neutral Buffered Formalin	NBF-
Neutral Buffered Formalin Blue	NBFB-
Neutral Buffered FormalinGreen	NBFG-
Neutral Buffered Formalin Conc	NBFH-
Neutral Buffered Formalin Pail	NBFJ-
Neutral Buffered Formalin 10%	NBFR-

#### Recommended use of the chemical and restrictions on use

Class II In vitro diagnostic reagent, intended for the preservation of samples for later morphological studies and/or diagnostic protocols.

#### Supplier's details

Name ChemSupply Australia Pty Ltd  
Address 38-50 Bedford Street  
5013 Gillman South Australia  
Australia  
  
Telephone 08 8440 2000  
email [www.chemsupply.com](http://www.chemsupply.com)

#### Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

### SECTION 2: Hazard identification

#### General hazard statement

Not classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

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Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

HSNO Approval Number: HSR001584

Classification under Work Safe New Zealand

- 6.1E - Substances that are acutely toxic
- 6.3A - Substances that are irritating to the skin
- 6.5B - Substances that are contact sensitisers
- 6.6B - Substances that are suspected human mutagens
- 6.7A - Substances that are known or presumed human carcinogens
- 6.9B - Substances that are harmful to human target organs or systems
- 9.2B - Substances that are ecotoxic in the soil environment
- 6.4A - Substances that are irritating to the eye

### Classification of the substance or mixture

#### GHS classification in accordance with: UN GHS revision 7

- Carcinogenicity, Cat. 1
- Germ cell mutagenicity, Cat. 2
- Skin corrosion/irritation, Cat. 2
- Skin sensitizer, Cat. 1
- Serious eye damage/eye irritation, Cat. 2A
- Specific target organ toxicity following repeated exposure, Cat. 2

#### GHS label elements, including precautionary statements

##### Pictograms



##### Signal word

**Danger**

##### Hazard statement(s)

- |      |   |
|------|---|
| H315 | Causes skin irritation  |
| H317 | May cause an allergic skin reaction                               |
| H319 | Causes serious eye irritation                                     |
| H341 | Suspected of causing genetic defects                              |
| H350 | May cause cancer  |
| H373 | May cause damage to organs through prolonged or repeated exposure |

##### Precautionary statement(s)

- |                |  |
|----------------|--|
| P201           | Obtain special instructions before use.  |
| P202           | Do not handle until all safety precautions have been read and understood.  |
| P260           | Do not breathe dust/fume/gas/mist/vapors/spray.  |
| P264           | Wash hands thoroughly after handling.  |
| P272           | Contaminated work clothing should not be allowed out of the workplace.   |
| P280           | Wear protective gloves/protective clothing/eye protection/face protection.   |
| P302+P352      | IF ON SKIN: Wash with plenty of water/soap   |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313      | IF exposed or concerned: Get medical advice/attention.   |

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P314	Get medical advice/attention if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility

### SECTION 3: Composition/information on ingredients

#### Mixtures

Molecular weight: 30.03

Information on ingredients:

Contains minor amounts of::

Edicol Blue - Blue;;

Bromothymol Blue - Green;;

Bromocresyl Purple - Purple;;

Phenol Red - Red;;

for colouring.

Stabilised with methanol. May contains various salts as buffering agents.

#### Components

Component	CAS no.	Concentration
<b>FORMALDEHYDE, 37% SOLUTION (EC no.: 200-001-8; Index no.: 605-001-00-5)</b>	<b>50-00-0</b>	<b>3 - 4.5 % (weight)</b>
CLASSIFICATIONS: Germ cell mutagenicity, Cat. 2; Acute toxicity, dermal, Cat. 3; Acute toxicity, oral, Cat. 3; Skin corrosion/irritation, Cat. 1B; Skin sensitizer, Cat. 1; Acute toxicity, inhalation, Cat. 2; Carcinogenicity, Cat. 1. HAZARDS: H301 - Toxic if swallowed; H311 - Toxic in contact with skin; H314 - Causes severe skin burns and eye damage; H317 - May cause an allergic skin reaction; H330 - Fatal if inhaled; H341 - Suspected of causing genetic defects [route]; H350 - May cause cancer [route]. [SCLs/M-factors/ATEs]: STOT SE 3; H335: C ≥ 5 %; Skin Corr. 1B; H314: C ≥ 25 %; Skin Irrit. 2; H315: 5 % ≤ C < 25 %; Eye Irrit. 2; H319: 5 % ≤ C < 25 %; Skin Sens. 1; H317: C ≥ 0,2 %		
<b>Methanol (EC no.: 200-659-6; Index no.: 603-001-00-X)</b>	<b>67-56-1</b>	<b>1 - 1.2 % (weight)</b>
CLASSIFICATIONS: Flammable liquids, Cat. 2; Acute toxicity, inhalation, Cat. 3; Acute toxicity, dermal, Cat. 3; Acute toxicity, oral, Cat. 3; Specific target organ toxicity following single exposure, Cat. 1. HAZARDS: H225 - Highly flammable liquid and vapor; H301 - Toxic if swallowed; H311 - Toxic in contact with skin; H331 - Toxic if inhaled; H370 - Causes damage to organs [organs, route]. [SCLs/M-factors/ATEs]: *; STOT SE 1; H370: C ≥ 10 %; STOT SE 2; H371: 3 % ≤ C < 10 %		

### SECTION 4: First-aid measures

#### Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
In case of skin contact	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
In case of eye contact	If in eyes, hold eyelids apart and flush eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor, or for at least 15 minutes.
If swallowed	Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

**Most important symptoms/effects, acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

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**SECTION 5: Fire-fighting measures**

**Suitable extinguishing media**

Small fire: Use foam, dry chemical, CO<sub>2</sub> or water spray.

Large fire: Use foam, fog or water spray. Do not use water jets.

If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out.

Avoid getting water inside containers.

Alcohol resistant foam is preferred however fine water spray can be used.

**Specific hazards arising from the chemical**

May liberate toxic fumes in fire including formic acid, methanol, carbon monoxide and carbon dioxide.

**Special protective actions for fire-fighters**

Wear SCBA, fully-encapsulating, gas-tight suit and structural firefighting uniform when handling leaking or damaged containers and equipment. SCBA and chemical splash suits will offer limited protection for brief exposure provided there is no risk of ignition.

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**SECTION 6: Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Use personal protective equipment. For personal protection see section 8.

**Methods and materials for containment and cleaning up**

Soak up with inert absorbent material and dispose of in accordance with local and national regulations. Keep in suitable, closed containers for disposal.

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**SECTION 7: Handling and storage**

**Precautions for safe handling**

Avoid inhalation of vapour or mist. For precautions see section 2.2.

Avoid ingestion and inhalation of vapour. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Keep containers closed when not in use. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. Under no circumstances eat, drink or smoke while handling this material. Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and wash before reuse.

**Conditions for safe storage, including any incompatibilities**

Store in a cool, dry, well-ventilated area, out of direct sunlight. Store in suitable, labelled containers. Keep containers tightly closed. Store away from incompatible materials. Ensure that storage conditions comply with applicable local and national regulations.

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**SECTION 8: Exposure controls/personal protection**

**Control parameters**

**CAS: 50-00-0**

FORMALDEHYDE, 37% SOLUTION

AU/SWA (Australia): 2 ppm; 2.5 mg/m<sup>3</sup> STEL inhalation; 1 ppm; 1.2 mg/m<sup>3</sup> TWA inhalation

**Appropriate engineering controls**

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn.

**Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection**

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

**Skin protection**

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Normally not required but if in doubt ensure hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.

**Body protection**

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

**Respiratory protection**

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

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**SECTION 9: Physical and chemical properties**

**Basic physical and chemical properties**

Physical state	Liquid
Appearance	Clear
Color	No data available.
Odor	Pungent, suffocating odour.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	Combustible liquid.
Lower and upper explosion limit/flammability limit	Flammable Limits - Lower: 7% Upper: 70%
Flash point	85 °C
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	7
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Completely miscible.
Partition coefficient n-octanol/water (log value)	Log P(oct) = 0.35 (experimental) (formaldehyde).
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	1.1
Relative vapor density	1.0

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Particle characteristics

No data available.

### Supplemental information regarding physical hazard classes

No data available.

### Further safety characteristics (supplemental)

No data available.

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## SECTION 10: Stability and reactivity

### Reactivity

Stable under normal conditions of storage and handling.

### Chemical stability

Stable under recommended storage conditions.

May form paraformaldehyde on prolonged storage or if stored outside recommended temperatures/conditions

### Possibility of hazardous reactions

None under normal use conditions.

### Conditions to avoid

Open flames, heat, hot surfaces, sparks and other ignition sources.

### Incompatible materials

Strong oxidizing agents, strong acids, strong bases, alkali metals.

### Hazardous decomposition products

Formic acid, methanol, carbon monoxide and carbon dioxide.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

Acute Toxicity - Oral: LD50 (rat): >200 mg/kg (Formaldehyde).

Ingestion: Harmful if swallowed. Ingestion may cause irritation of the mouth, throat and stomach resulting in nausea. In extreme cases swallowing can result in vomiting, diarrhoea, abdominal pain, convulsions, chemical burns, loss of consciousness, collapse and possible death. Risk of perforation in the oesophagus and stomach. Systemic effects: narcosis and blindness.

Inhalation: Harmful if inhaled. Inhalation may lead to the formation of oedemas in the respiratory tract. Vapour is irritating to mucous membranes and the respiratory tract. Inhalation can result in headache, dizziness and possible nausea.

#### Skin corrosion/irritation

May cause an allergic skin reaction. Repeated or prolonged skin contact may lead to allergic contact dermatitis. A skin sensitizer.

#### Serious eye damage/irritation

May be an irritant to the eye.

#### Respiratory or skin sensitization

Formaldehyde: Known to act as a sensitizer.

#### Germ cell mutagenicity

Formaldehyde [50-00-0]: DNA damage system-human: fibroblast 100 mmol/l.

**Carcinogenicity**

H350 May cause cancer.

Formaldehyde [50-00-0] is evaluated in the IARC Monographs (Vol. 88; in preparation) as Group 1: Carcinogenic to humans. For addition information see IARC publication: <http://monographs.iarc.fr/ENG/Monographs/vol100F/mono100F-29.pdf>

**Reproductive toxicity**

Formaldehyde [resp], human: one study suggests a slight percentage increase in spontaneous abortion and subtle neurobehavioral abnormalities, animal-decreased sperm motility, reduced fetal and maternal weight.

**Specific target organ toxicity (STOT) - single exposure**

No data available.

**Specific target organ toxicity (STOT) - repeated exposure**

May cause damage to Kidney, Liver and Spleen on repeated exposure

**Aspiration hazard**

No data available.

**Additional information**

Chronic Effects: Repeated or prolonged skin contact may cause chronic dermatitis. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

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**SECTION 12: Ecological information**

**Toxicity**

Biological Properties: Toxic for aquatic organisms. Protoplasmatic toxin. Caustic even in diluted form. Disinfectant effect. Toxic effect on fish and plankton. Sludge decomposition impaired or not possible even in diluted concentration. Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities.

Acute Toxicity - Fish: LC50 (P.promelas): 24 mg/l /96 h (Formaldehyde);  
LC50 (Br.rerio): 41 mg/l /96 h (Formaldehyde).

Acute Toxicity - Daphnia: Daphnia magna EC50: ~2 mg/l /48 h (Formaldehyde).

Acute Toxicity - Algae: Maximum permissible toxic concentration: Algal toxicity: Sc.quadricauda IC5: 2.5 mg/l /8 d (Formaldehyde).

Acute Toxicity - Bacteria: Photobacterium phosphoreum EC50: 8.5 mg/l /30 min (Formaldehyde).  
Bacterial toxicity: M.aeruginosa EC5: 0.39 mg/l /8 d (Formaldehyde).

**Persistence and degradability**

Abiotic degradation: Rapid degradation. (air, formaldehyde)

Biologic degradation: Biodegradation: 97.4 % /5 d (Formaldehyde). Readily biodegradable.

COD: 1.06 g/g (Formaldehyde); TOD: 1.068 g/g (Formaldehyde)

**Bioaccumulative potential**

No bioaccumulation is to be expected (log P(o/w) <1).

**Mobility in soil**

Distribution: log p(o/w): 0.00 (Formaldehyde).

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**SECTION 13: Disposal considerations**

**Disposal methods**

**Product disposal**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

**Sewage disposal**

No bioaccumulation is to be expected (log P(o/w) <1).

**Other disposal recommendations**

Do not discharge this material into waterways, drains and sewers.

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**SECTION 14: Transport information**

**ADG (Road and Rail)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

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**SECTION 15: Regulatory information**

**Safety, health and environmental regulations specific for the product in question**

**Australia SUSMP**

Poison Schedule: S6

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**SECTION 16: Other information**

1.1 - Added product codes and descriptions to section 1 - 10/4/24

1.2 - Added NZ HSNO classification to Section 2 - 4/12/24

**Further information/disclaimer**

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

**Preparation information**

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia  
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'  
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.  
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.



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Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), [hcis.safeworkaustralia.gov.au](https://hcis.safeworkaustralia.gov.au)

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)