HURST SCIENTIFIC

Safety Data Sheet
Neutral Buffered Formalin 10%

SECTION 1: Identification

GHS Product identifier

Product name	Neutral Buffered Formalin 10%
Product number	NBF()-500M, 1L, 2.5L, 5L, 10L, 20L
Brand	Hurstchem

Recommended use of the chemical and restrictions on use

Laboratory Reagent

Supplier's details

Name	Hurst Scientific
Address	2 Transit Place 6112 Forrestdale WA Australia
Telephone	1300 778 068
email	sales@hurstscientific.com.au

Emergency phone number

Australian Poisons Information Centre 131 126
Australian Emergency Services 000

SECTION 2: Hazard identification

General hazard statement

Not classified as dangerous goods according to the Australian Dangerous Goods Code (ADG). Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 8

- Carcinogenicity, Cat. 1
- Germ cell mutagenicity, Cat. 2
- Skin corrosion/irritation, Cat. 2
- Sensitization - skin, Cat. 1
- Eye damage/irritation, Cat. 2A
- Specific target organ toxicity, repeated exposure, Cat. 2

GHS label elements, including precautionary statements

Pictograms

1. Health hazard; 2. Exclamation mark

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 [route]
H350	May cause cancer [route]
H373	May cause damage to organs [organs] through prolonged or repeated exposure [route]

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 … 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/hearing protection/ ...
P302+P352	IF ON SKIN: Wash with plenty of water/...
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+P316	IF exposed or concerned: Get emergency medical help immediately.
P319	Get medical help if you feel unwell.
P333+P317	If skin irritation or rash occurs: Get medical help.
P337+P317	If eye irritation persists: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container to …

Other hazards which do not result in classification
No data available.

SECTION 3: Composition/information on ingredients

Mixtures

Components

1. Formaldehyde

Concentration	>= 3 - < 5 % (weight)
EC no.	200-001-8
CAS no.	50-00-0
Index no.	605-001-00-5

- Carcinogenicity, Cat. 1B
- Germ cell mutagenicity, Cat. 2

- Acute toxicity, inhalation, Cat. 3
- Acute toxicity, dermal, Cat. 3
- Acute toxicity, oral, Cat. 3
- Skin corrosion/irritation, Cat. 1B
- Skin sensitizer, Cat. 1

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
H331	Toxic if inhaled
H341	Suspected of causing genetic defects [route]
H350	May cause cancer [route]

2. Potassium phosphate Monobasic

Concentration	< 1 % (weight)
EC no.	231-913-4
CAS no.	7778-77-0

3. Sodium phosphate dibasic

Concentration	< 1 % (weight)
EC no.	231-448-7
CAS no.	7558-79-4

4. Water

Concentration	Balance
EC no.	231-791-2
CAS no.	7732-18-5

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	Evacuate to fresh air immediately. Seek medical attention. If unconscious place in recovery position, provide artificial respiration if breathing ceases.
In case of skin contact	Remove contaminated clothing and wash affected area with soap and water thoroughly. If irritation develops, seek medical attention.
In case of eye contact	Flush eyes with copious amounts of water for at least 15 minutes. If irritation develops or persists, seek medical attention.

If swallowed	DO NOT induce vomiting. If a small amount has been swallowed, dilute the stomach by consuming copious amounts of water. For large volumes 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.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use media suitable for other material involved in fire.

Specific hazards arising from the chemical
Toxic gases may evolve.

Special protective actions for fire-fighters
Wear SCBA (Self-Contained Breathing Apparatus) and full protective equipment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Ensure adequate ventilation. If possible contain the spill. Evacuate all unnecessary personnel.

Methods and materials for containment and cleaning up
Absorb with vermiculite or similar and place into a suitably labelled container. Dispose of waste according to local authority guidelines. Wash the affected area with a large volume of water. Do not contaminate drains or waterways.

SECTION 7: Handling and storage

Precautions for safe handling
Use only in an adequately ventilated area. Avoid breathing in mists or vapours. Wear appropriate protective clothing to avoid any exposure and practice good personal hygiene.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well-ventilated area away from direct sunlight.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 50-00-0
Formaldehyde
AU/SWA: 2ppm STEL inhalation; 1ppm TWA inhalation

Appropriate engineering controls
Ensure adequate ventilation to maintain airborne concentrations below national exposure standards.

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

Eye/face protection
Safety glasses or goggles.

Skin protection
Chemical-resistant gloves and laboratory coat.

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.

Environmental exposure controls
Biological Limit Values Not available for this product.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Color	Clear or Coloured with Dye
Odor	Pungent
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	Water Soluble
Vapor pressure	No Data Available
Evaporation rate	No Data Available
Density and/or relative density	1.09g/cm3
Relative vapor density	1.0

Particle characteristics
No Data Available

Supplemental information regarding physical hazard classes
No Data Available

Further safety characteristics (supplemental)
No Data Available

SECTION 10: Stability and reactivity

Reactivity
Non-reactive under recommended conditions for use and storage.

Chemical stability
Stable under recommended conditions for use and storage.

Possibility of hazardous reactions
Polymerisation will not occur.

Conditions to avoid
Heat and incompatibles.

Incompatible materials
Strong oxidisers, alkalis and acids.

Hazardous decomposition products
Toxic gases may evolve.

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 on allergic skin reaction. Repeated or prolonged skin contact may lead to allergic contact dermatitis. A skin sensitiser.

Serious eye damage/irritation
May be an irritant to the eye.

Respiratory or skin sensitization
Formaldehyde: Known to act as a sensitiser.

Germ cell mutagenicity
No data available.

Carcinogenicity
Formaldehyde is classified as a Category 1 Carcinogen (IARC) – Carcinogenic to humans.

Reproductive toxicity
No data available.

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.

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: Algeal 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
Not expected to bio-accumulate.

Mobility in soil
No data available.

Other adverse effects
Environmental fate (exposure) Do not contaminate drains and waterways.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Dispose of in accordance with local authority guidelines.

Packaging disposal
Dispose of in accordance with local authority guidelines.

Waste treatment
Dispose of in accordance with local authority guidelines.

Sewage disposal
No bioaccumulation is to be expected.

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

SECTION 14: Transport information

UN Number	None
UN Proper Shipping Name	None
Transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None
Transport in bulk according to IMO instruments	None

SECTION 15: Regulatory information

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

Chemical Safety Assessment
• Poison Schedule: S6

SECTION 16: Other information

Further information/disclaimer

This SDS is prepared in accordance with the Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (2011). The information contained within is believed to be accurate at the date of preparation/review. Hurst Scientific makes no claims of the accuracy or completeness of the information and excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. It is recommended the user make their own determinations as to the suitability of the information provided to the application in which the product is to be used.

Preparation information

References

1. Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (2011).
2. Safe Work Australia, National Code of Practice for the Labelling of Workplace Hazardous Chemicals (2015).
3. Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants (2013)
4. National Transport Commission Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code); Canprint: Canberra (2007), Volume 1, 7th Edition.
5. Standards Australia, Dangerous Goods Initial Emergency Response Guide: Australian Handbook (SAA/SNZ HB76); Homebush (2004).