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MATERIAL SAFETY DATASHEET

1/ Product Identification:

Product name: Neutral Buffered Formalin 10%v/v
Product type: Histological transport medium
Supplier: Genta Medical
Unit 17D Marston Business Park
Tockwith
North Yorkshire YO26 7QF.
Tel: 01423 358 128
Fax: 01423 358 126

2/ Composition

| Ingredient | Conc | Hazard and Risk Phrases (in product) | | CAS | EC number |
|----------------------|---------|--------------------------------------|--------------------------|-----------|-----------|
| Formaldehyde | 4 - 5% | Xn | R20/21/22-36/37/38-40-43 | 50-00-0 | 200-001-8 |
| Methanol | 1% | Xn | R20/21/22 | 67-56-1 | 200-659-6 |
| Disodium Phosphate | 0.65% | | None | 7558-79-4 | 231-448-7 |
| Monosodium Phosphate | 0.35% | | None | 8558-80-7 | 231-449-2 |
| Water | To 100% | | None | 7732-18-5 | 231-791-2 |

3/ Hazard identification



HARMFUL

- R20/21/22 Harmful by inhalation, in contact with the skin or if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitisation by skin contact.
S(1/2) Keep locked up and out of the reach of children
S26 In case of contact with the eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye / face protection.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
S51 Use only in well ventilated areas

4/ First Aid Measures

Product: Neutral Buffered Formalin 10%. Issue RR 22/02/2010. Version 2.0

- Eyes: Wash eyes immediately with plenty of water while lifting eyelids. Seek medical attention immediately. Continue to rinse.
- Skin: Remove affected person from the source of contamination and immediately flush contaminated skin with plenty of water. Remove any contaminated clothing and wash before reuse. If irritation persists, seek medical attention.
- Ingestion: Rinse out mouth with water and give warm water to drink. Do not induce vomiting. Transport to hospital. Seek medical attention immediately.
- Inhalation: Move the exposed person to fresh air immediately. If breathing has stopped perform artificial respiration immediately. Keep affected person warm and rest while seeking urgent medical attention.

5/ Fire hazards and fire fighting procedures.

Product has low flammability. In case of fire where formalin solution is stored it is important that the following guidelines are followed:

Extinguishing Media - Use any media according to what else is in the fire.

Special firefighting procedures: Fire fighters should use self contained breathing apparatus and protective clothing. Use water to keep exposed containers cool and disperse vapours. If a leak or spill has not ignited, use water spray to protect men who are stopping the leak. Water spray may be used to flush spills away from exposures and dilute spills to reduce flammability. Keep water run-off out of sewers and water sources. Dike for water control. Cool containers exposed to flames with water from the side until well after the flames are extinguished. Move container from the fire area if it is safe to do so without risk.

Withdraw immediately if you hear a rising sound from the ventilation safety device or if there is discolouration of tanks due to fire. Do not get water inside container.

6/ Accidental release measures (Spillage).

Spill cleanup methods: Absorb spill with inert, damp non-combustible material. Seal the contaminated material in a plastic bag for future disposal. Extinguish all ignition sources. Provide ventilation and confine spill. Do not allow run-off water to enter drains.

Clean up team should use respiratory and/or liquid contact protection.

7/ Storage and handling.

Usage precautions: Avoid contact with the skin, eyes or clothing. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Avoid acids, moisture and combustible materials. Read and follow manufacturer's recommendations. Wear full protective clothing for prolonged exposure and high concentrations.

Storage precautions: Keep away from oxidisers, heat & flames. Avoid contact with hydrochloric acid as this can generate toxic byproducts. Store in a warm area to avoid formation of polymer. Store with good ventilation. Keep containers tightly closed.

Ventilation: Use local or general exhaust mechanical ventilation to control vapours.

8/ Exposure control

OCCUPATIONAL EXPOSURE LIMITS (FORMALDEHYDE):

2ppm / 2.5 mg/m³ 15 minute STEL

2ppm / 2.5mg/m³ 8hr TWA

Respirators: in the absence of adequate mechanical ventilation, use a full face mask with organic filters or dedicated formalin filters.

Protective gloves: Butyl rubber, nitrile or viton. **(NOT LATEX)**

Eye protection: Use splash proof eye goggles.

Other: Use engineering controls to reduce air contamination. Provide eyewash, protective clothing, barrier cream.

9/ Physical / Chemical properties

Appearance: Colourless liquid, pungent odour

pH : 6.8 – 7.2

Viscosity: 1.0cP

Boiling point: 96 – 101C

Autoflammability: 300C.

Flammability limit: Upper,72%, lower 7%.

Vapour pressure: 2.7mm Hg @ 35C

Vapour density: 1.04

Relative density (SG):1.016 – 1.020

Solubility: Miscible with water.

10/ Stability and reactivity

Stability: Evolves a flammable gas at high temperatures.

Conditions to avoid: Oxidising agents, hydrochloric acid. Avoid contact with any metal apart from stainless steel.

Hazardous decomposition products: Can be evolved when heating.

11/ Toxicological information.

LD50 100mg/kg (oral rat)

LD50 42mg/kg (oral mouse)

LC50 203mg/L (inhalation rat).

Health warnings: Gas or vapour is toxic or extremely irritating on short exposure. May cause skin/eye irritation and percutaneous absorption burns. Known or suspected carcinogen for humans (category 3) if used above MEL. Recognised allergen. Swallowing concentrated chemical may cause severe internal injury.

Medical symptoms: Extreme irritation of eyes and mucous membranes. Rhinitis. Upper respiratory irritation. General respiratory distress, unproductive cough. May cause suffocation, severe skin irritation, allergic rash, nausea, vomiting, severe abdominal pain, dizziness.

Chronic health hazards: Chronic eye irritation, acute eczematous dermatitis, contact type erythma, edema, papules, vesicles, bullae, crusts, desquamation.

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12/ Ecological information.

| | |
|-------------------|--|
| Mobility: | Completely miscible in water. |
| Persistence: | Biodegradable in soil and water. |
| Bioaccumulation: | Log Pow = 0. Does not bioaccumulate. |
| Aquatic toxicity: | LC50(96hr) = 134mg/L (Rainbow trout fingerlings) |
| Other: | Bacteria toxicity threshold 14mg/L . Troposcopic degradation half life in daylight = 3hrs. |

13/ Disposal considerations.

Dispose in accordance with local regulations. Dilute with solvent and incinerate with gas cleaner OR neutralise, seal and dispose in secure landfill.

14/ Transport information

Not hazardous for transport.

15/ Regulatory information

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|-----------|--|
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Other applicable regulations:

- The carriage of dangerous goods and use of transportable pressure vessel regulations
- Chemicals (Hazard information and packaging) for supply regulations 2002 (CHIP III)
- Highly flammable liquid regulations 1972
- Health & Safety at Work Act 1974
- Control of Substances Hazardous to health Regulations 1988.
- Carriage of dangerous goods by road & rail (classification and labelling) Regulations 1994.

16/ Other information

Disclaimer:

This information relates only to the specific material designated and as such may not be valid for such material used in a combination with other materials or processes. The information is believed to be accurate but is without warranty. Genta Medical is not liable for any injury or loss which may result from inappropriate use of the product.