# SAFETY DATA SHEET

according to Work Health and Safety Regulations 2011

## Formaldehyde Sample Buffer

Version 3.0 Revision Date 16.04.2024 Print Date 12.06.2024

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | Formaldehyde Sample Buffer |
| Material number | : | 50571 |

**Manufacturer or supplier's details**

| | | |
|---|---|---|
| Company | : | Capsugel Australia Pty Ltd.<br>Suite 610, 12 Century Circuit,<br>Norwest NSW 2153<br>Australia<br><br>Lonza Ltd<br>Muenchensteinerstrasse 38<br>CH-4002 Basel<br>Switzerland |
| Telephone | : | Tel +61 3 9550 0883 |
| Telefax | : | Tel +61 3 9550 0890 |
| E-mail address | : | sds@lonza.com |
| Emergency telephone number | : | +41 61 313 94 94 (24h) |

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

| | | |
|---|---|---|
| Recommended use | : | For research use only. |
| Restrictions on use | : | NOT FOR USE IN GMP MANUFACTURING, NOR HUMAN OR ANIMAL IN VIVO OR DIAGNOSTIC USE. |

## SECTION 2. HAZARDS IDENTIFICATION

**GHS Classification**

| | | |
|---|---|---|
| Flammable liquids | : | Category 4 |
| Acute toxicity (Oral) | : | Category 4 |
| Acute toxicity (Inhalation) | : | Category 4 |
| Acute toxicity (Dermal) | : | Category 4 |
| Skin corrosion/irritation | : | Sub-category 1B |
| Serious eye damage/eye irritation | : | Category 1 |
| Skin sensitisation | : | Category 1 |
| Germ cell mutagenicity | : | Category 2 |
| Carcinogenicity | : | Category 1B |
| Reproductive toxicity | : | Category 1B |

| | | |
|---|---|---|
| Specific target organ toxicity - single exposure | : | Category 2 (Eyes) |
| Specific target organ toxicity - repeated exposure | : | Category 2 |

**GHS label elements**

Hazard pictograms :

Signal word : Danger

Hazard statements :

H227 Combustible liquid.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H371 May cause damage to organs (Eyes).
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements :

**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.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
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.
P310 Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to a local hazardous waste disposal facility.

**Other hazards which do not result in classification**

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Hazardous components**

| Chemical name | CAS-No. | Concentration (% w/w) |
|---|---|---|
| Formamide | 75-12-7 | >= 30 - < 50 |
| Formaldehyde | 50-00-0 | >= 10 - < 15 |
| Methanol | 67-56-1 | >= 3 - < 5 |

## SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact : After contact with skin, wash immediately with plenty of soap and water.
If on clothes, remove clothes.
In the case of skin irritation or allergic reactions see a physician.

In case of eye contact : Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes.
Call a physician immediately.
Remove contact lenses.
Keep eye wide open while rinsing.
Protect unharmed eye.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : No information available.

Notes to physician : Treat symptomatically.

## SECTION 5. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Suitable extinguishing media | : | Water spray |
| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during firefighting | : | Heating or fire can release toxic gas. |
| Hazardous combustion products | : | Nitrogen oxides (NOx)<br>Ammonia<br>Carbon oxides (COx)<br>Formaldehyde |
| Specific extinguishing methods | : | Standard procedure for chemical fires.<br>Use water spray to cool unopened containers.<br><br>Use a water spray to cool fully closed containers. |
| Special protective equipment for firefighters | : | In the event of fire, wear self-contained breathing apparatus.<br>Use personal protective equipment. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Use respirator when performing operations involving potential exposure to vapour of the product. |
| Environmental precautions | : | Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so. |
| Methods and materials for containment and cleaning up | : | Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). |

## SECTION 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| Advice on protection against fire and explosion | : | Normal measures for preventive fire protection. |
| Advice on safe handling | : | Avoid formation of aerosol.<br>Avoid exposure - obtain special instructions before use.<br>Do not breathe vapours/dust.<br>Avoid contact with skin and eyes.<br>Smoking, eating and drinking should be prohibited in the application area.<br>For personal protection see section 8.<br>Provide sufficient air exchange and/or exhaust in work rooms.<br>Dispose of rinse water in accordance with local and national regulations. |
| Hygiene measures | : | Wash hands before breaks and at the end of workday.<br>When using do not eat, drink or smoke.<br>Avoid contact with skin, eyes and clothing. |

| | | |
|---|---|---|
| Conditions for safe storage | : | Observe label precautions.<br>Keep container tightly closed.<br>Keep in a well-ventilated place.<br>To maintain product quality, do not store in heat or direct sunlight. |
| Further information on storage stability | : | No decomposition if stored and applied as directed. |

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Formamide | 75-12-7 | TWA | 10 ppm<br>18 mg/m3 | AU OEL |
| | Further information: Skin absorption | | | |
| | | TWA | 1 ppm | ACGIH |
| Formaldehyde | 50-00-0 | STEL | 2 ppm<br>2,5 mg/m3 | AU OEL |
| | Further information: Category 2 (Carc. 2) Suspected human carcinogen, Sensitiser | | | |
| | | TWA | 1 ppm<br>1,2 mg/m3 | AU OEL |
| | Further information: Category 2 (Carc. 2) Suspected human carcinogen, Sensitiser | | | |
| | | TWA | 0,1 ppm | ACGIH |
| | | STEL | 0,3 ppm | ACGIH |
| Methanol | 67-56-1 | TWA | 200 ppm<br>262 mg/m3 | AU OEL |
| | Further information: Skin absorption | | | |
| | | STEL | 250 ppm<br>328 mg/m3 | AU OEL |
| | Further information: Skin absorption | | | |
| | | TWA | 200 ppm | ACGIH |
| | | STEL | 250 ppm | ACGIH |

**Occupational exposure limits of decomposition products**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Hydrogen cyanide | 74-90-8 | Peak limit | 10 ppm<br>11 mg/m3 | AU OEL |
| | Further information: Skin absorption | | | |
| | | C | 4,7 ppm<br>(Cyanide) | ACGIH |

**Biological occupational exposure limits**

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|---|---|---|---|---|---|---|
| Methanol | 67-56-1 | Methanol | Urine | End of shift (As | 15 mg/l | ACGIH BEI |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | soon as possible after exposure ceases) | | |

**Engineering measures** : Use only in area provided with appropriate exhaust ventilation.

**Personal protective equipment**

Respiratory protection : Respirator with a vapour filter (EN 141)

Hand protection

Material : Nitrile rubber

Remarks : Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Impervious gloves Break through time : > 480 min

Eye protection : Safety goggles

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place. Impervious clothing

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Aqueous solution |
| Colour | : | No data available |
| Odour | : | No data available |
| Odour Threshold | : | No data available |
| pH | : | 6 - 8 |
| Melting point/freezing point | : | No data available |
| Initial boiling point and boiling range | : | No data available |
| Flash point | : | No data available |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Flammability (liquids) | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapour pressure | : | No data available |

| | | |
|---|---|---|
| Relative vapour density | : | No data available |
| Relative density | : | No data available |
| Density | : | No data available |
| Water solubility | : | completely soluble |
| Partition coefficient: n-octanol/water | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity, dynamic | : | No data available |
| Viscosity, kinematic | : | No data available |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | No decomposition if stored and applied as directed. |
| Chemical stability | : | Stable under recommended storage conditions. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions.<br>No hazards to be specially mentioned. |
| Conditions to avoid | : | Keep away from heat and sources of ignition.<br>Heat |
| Incompatible materials | : | Oxidizing agents<br>Strong acids and strong bases |
| Hazardous decomposition products | : | No decomposition if used as directed. |
| Hazardous decomposition products | : | Hydrogen cyanide |

## SECTION 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

| | | |
|---|---|---|
| Acute oral toxicity | : | Acute toxicity estimate: 644,75 mg/kg<br>Method: Calculation method |
| Acute inhalation toxicity | : | Acute toxicity estimate: 19,34 mg/l<br>Exposure time: 4 h<br>Test atmosphere: vapour<br>Method: Calculation method |
| Acute dermal toxicity | : | Acute toxicity estimate: 1 793 mg/kg<br>Method: Calculation method |

**Skin corrosion/irritation**

Remarks : No data available

**Serious eye damage/eye irritation**

Remarks : No data available

**Respiratory or skin sensitisation**

Remarks : No data available

**Germ cell mutagenicity**

Genotoxicity in vitro : Remarks: No data available

**Carcinogenicity**

Remarks : No data available

Carcinogenicity - Assessment : May cause cancer.

**Reproductive toxicity**

Effects on fertility : Remarks: No data available

Reproductive toxicity - Assessment : May cause harm to the unborn child.

**STOT - single exposure**

Remarks : No data available

**STOT - repeated exposure**

Remarks : No data available

**Aspiration toxicity**

No aspiration toxicity classification

**Further information**

Remarks : No data available

**The following toxicological data refer to:**

Formamide(CAS-No.: 75-12-7)

**Acute toxicity**

Acute oral toxicity : LD50 (Rat): 5 800 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 21 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): 17 000 mg/kg

**Skin corrosion/irritation**

Species : Rabbit
Assessment : No skin irritation

| | | |
|---|---|---|
| Result | : | No skin irritation |

**Serious eye damage/eye irritation**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No eye irritation |
| Assessment | : | No eye irritation |

**Respiratory or skin sensitisation**

| | | |
|---|---|---|
| Species | : | Guinea pig |
| Result | : | not sensitizing |

**Germ cell mutagenicity**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Species: Salmonella typhimurium<br>Metabolic activation: yes<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: In vivo micronucleus test<br>Result: negative |

**Carcinogenicity**

| | | |
|---|---|---|
| Carcinogenicity - Assessment | : | Limited evidence of carcinogenicity in animal studies (oral) |

**STOT - repeated exposure**

| | | |
|---|---|---|
| Exposure routes | : | Inhalation, Skin contact, Ingestion |
| Target Organs | : | Cardio-vascular system |
| Assessment | : | May cause damage to organs through prolonged or repeated exposure. |

**The following toxicological data refer to:**

Formaldehyde(CAS-No.: 50-00-0)

**Acute toxicity**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): 100 mg/kg |
| Acute inhalation toxicity | : | Acute toxicity estimate: 3,1 mg/l<br>Exposure time: 4 h<br>Test atmosphere: vapour<br>Method: Calculation method |
| Acute dermal toxicity | : | LD50 (Rabbit): 270 mg/kg |

**Skin corrosion/irritation**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Assessment | : | Causes burns. |
| Result | : | Severe skin irritation |

**Serious eye damage/eye irritation**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | Severe eye irritation |
| Assessment | : | Risk of serious damage to eyes. |

**Respiratory or skin sensitisation**

| | | |
|---|---|---|
| Species | : | Guinea pig |
| Assessment | : | Causes sensitisation. |
| Result | : | Sensitising |

**Germ cell mutagenicity**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Species: Salmonella typhimurium<br>Method: OECD Test Guideline 471<br>Result: positive<br>GLP: yes |
| | : | Test Type: Chromosome aberration test in vitro<br>Species: Chinese hamster ovary cells<br>Result: positive<br>GLP: yes |
| | : | Test Type: gene mutation test<br>Species: mouse lymphoma cells<br>Result: positive |

**The following toxicological data refer to:**

Methanol(CAS-No.: 67-56-1)

**Acute toxicity**

| | | |
|---|---|---|
| Acute oral toxicity | : | Remarks: No data available |
| Acute inhalation toxicity | : | Remarks: No data available |
| Acute dermal toxicity | : | Remarks: No data available |

**Skin corrosion/irritation**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No skin irritation |

**Serious eye damage/eye irritation**

| | | |
|---|---|---|
| Remarks | : | No data available |

**Respiratory or skin sensitisation**

| | | |
|---|---|---|
| Species | : | Guinea pig |
| Result | : | not sensitizing |

**Germ cell mutagenicity**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: gene mutation test<br>Species: mouse lymphoma cells<br>Result: negative |

**Reproductive toxicity**

| | | |
|---|---|---|
| Effects on fertility | : | Species: Rat<br>General Toxicity - Parent: NOAEL: 1,33 mg/l |
| Effects on foetal development | : | Species: Rat<br>Teratogenicity: NOAEL: 1,3 mg/l |

**STOT - single exposure**

| | | |
|---|---|---|
| Target Organs | : | Eyes |
| Assessment | : | Causes damage to organs. |

**STOT - repeated exposure**

| | | |
|---|---|---|
| Remarks | : | No data available |

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

| | | |
|---|---|---|
| Toxicity to fish | : | Remarks: No data available |

**Persistence and degradability**

| | | |
|---|---|---|
| Biodegradability | : | Remarks: No data available |

**Bioaccumulative potential**

| | | |
|---|---|---|
| Bioaccumulation | : | Remarks: No data available |

**Mobility in soil**

| | | |
|---|---|---|
| Distribution among environmental compartments | : | Remarks: No data available |

**Other adverse effects**

| | | |
|---|---|---|
| Additional ecological information | : | No data available |

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

| | | |
|---|---|---|
| Waste from residues | : | Dispose of contents/container in accordance with local regulation.<br>Contact waste disposal services.<br>Do not dispose of waste into sewer. |
| Contaminated packaging | : | Dispose of as unused product.<br>Do not re-use empty containers. |

## SECTION 14. TRANSPORT INFORMATION

**IATA**

| | | |
|---|---|---|
| **UN number** | : | 3334 |
| **Proper shipping name** | : | Aviation regulated liquid, n.o.s. (Formaldehyde) |
| **Transport hazard class(es)** | : | 9 |
| **Packing group** | : | III |
| Labels | : | 9 |
| **Environmental hazards** | : | no |

**IMDG** Not dangerous goods

| | | |
|---|---|---|
| **UN number** | : | Not applicable |
| **Proper shipping name** | : | Not applicable |
| **Transport hazard class(es)** | : | Not applicable |
| **Packing group** | : | Not applicable |
| **Environmental hazards** | : | Marine pollutant: no |

**ADR** : Not dangerous goods

| | | |
|---|---|---|
| **UN number** | : | Not applicable |
| **Proper shipping name** | : | Not applicable |
| **Transport hazard class** | : | Not applicable |
| **Packing group** | : | Not applicable |
| **Environmental hazards** | : | no |

**RID** : Not dangerous goods

| | | |
|---|---|---|
| **UN number** | : | Not applicable |
| **Proper shipping name** | : | Not applicable |
| **Transport hazard class** | : | Not applicable |
| **Packing group** | : | Not applicable |
| **Environmental hazards** | : | no |
| **Special precautions for user** | : | none |
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | : | Not applicable |

## SECTION 15. REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Therapeutic Goods (Poisons Standard) Instrument**

Not applicable

## SECTION 16. OTHER INFORMATION

Revision Date : 16.04.2024

Date format : dd.mm.yyyy

**Full text of other abbreviations**

| | | |
|---|---|---|
| ACGIH | : | USA. ACGIH Threshold Limit Values (TLV) |
| ACGIH BEI | : | ACGIH - Biological Exposure Indices (BEI) |
| AU OEL | : | Australia. Workplace Exposure Standards for Airborne Contaminants. |

| | | |
|---|---|---|
| ACGIH / TWA | : | 8-hour, time-weighted average |
| ACGIH / STEL | : | Short-term exposure limit |
| ACGIH / C | : | Ceiling limit |
| AU OEL / TWA | : | Exposure standard - time weighted average |
| AU OEL / STEL | : | Exposure standard - short term exposure limit |
| AU OEL / Peak limit | : | Exposure standard - peak |

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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