SAFETY DATA SHEET
according to Work Health and Safety Regulations 2011

FORMALDEHYDE SAMPLE BUFFER

Version 2.1 Revision Date 02.06.2022 Print Date 20.04.2024

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Formaldehyde Sample Buffer

Material number : 50571

Manufacturer or supplier's details

Company : Capsugel Australia Pty Ltd.
Suite 610, 12 Century Circuit,
Norwest NSW 2153
Australia

Lonza Ltd
Muenchensteinerstrasse 38
CH-4002 Basel
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 : Scientific research and development

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

No information available.

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

Hazardous components

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Methanol	67-56-1	>= 3 -< 5

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Call a physician immediately.
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.
Take off all contaminated clothing immediately.
If skin irritation persists, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Call a physician immediately.

If swallowed : Immediately give plenty of water (if possible charcoal slurry).
Do not induce vomiting without medical advice.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.

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

Notes to physician : No information available.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray

		Dry powder Foam
Hazardous combustion products	:	Nitrogen oxides (NOx) Ammonia Carbon oxides (Cox)
Specific extinguishing methods	:	Standard procedure for chemical fires. Use water spray to cool unopened containers.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use respirator when performing operations involving potential exposure to vapour of the product.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
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	:	Highly flammable. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.
Advice on safe handling	:	In case of insufficient ventilation, wear suitable respiratory equipment. Avoid exposure - obtain special instructions before use. Use only in area provided with appropriate exhaust ventilation. Avoid contact with skin and eyes.
Hygiene measures	:	DANGER! Avoid contact with the skin and the eyes. Avoid breathing dust or spray mist. Wash hands before breaks and immediately after handling the product.
Conditions for safe storage	:	Keep containers tightly closed in a dry, cool and well-ventilated place.

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 18 mg/m3	AU NOEL
		TWA	1 ppm	ACGIH
Formaldehyde	50-00-0	STEL	2 ppm 2,5 mg/m3	AU NOEL
	Further information: Sensitizer.			
		TWA	1 ppm 1,2 mg/m3	AU NOEL
	Further information: Sensitizer.			
		STEL	0,3 ppm	ACGIH
		TWA	0,1 ppm	ACGIH
Methanol	67-56-1	STEL	250 ppm 328 mg/m3	AU NOEL
		TWA	200 ppm 262 mg/m3	AU NOEL
		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	10 ppm 11 mg/m3	AU NOEL
			4,7 ppm (as CN)	ACGIH

Biological occupational exposure limits

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

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

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection
- Material : Nitrile rubber
- Rate of permeability : > 480 min

Eye protection : Tightly fitting safety goggles

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place. Complete suit protecting against chemicals

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	:	Stable under recommended storage conditions.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable under normal conditions.
Conditions to avoid	:	Keep away from heat and sources of ignition.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	Hydrogen cyanide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

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

Further information

Remarks	:	There is no data available for this product. May cause cancer. May cause harm to the unborn child.

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 Species: Salmonella typhimurium Metabolic activation: yes Result: negative
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Result: negative

STOT - repeated exposure

Exposure routes	:	Inhalation, Skin contact, Ingestion
Target Organs	:	Cardio-vascular system
Assessment	:	May cause damage to organs (larynx) 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 Exposure time: 4 h Test atmosphere: vapour 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 Species: Salmonella typhimurium Method: OECD Test Guideline 471 Result: positive GLP: yes
	:	Test Type: Chromosome aberration test in vitro Species: Chinese hamster ovary cells

Result: positive
GLP: yes

: Test Type: gene mutation test
Species: mouse lymphoma cells
Result: positive

The following toxicological data refer to:

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

Skin corrosion/irritation

Species : Rabbit
Result : No skin irritation

Respiratory or skin sensitisation

Species : Guinea pig
Result : not sensitizing

Germ cell mutagenicity

Genotoxicity in vitro : Test Type: gene mutation test
Species: mouse lymphoma cells
Result: negative

Reproductive toxicity

Effects on fertility : Species: Rat
General Toxicity - Parent: NOAEL: 1,33 mg/l

Effects on foetal development : Species: Rat
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 : Result: 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 is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of in accordance with local regulations. Contact waste disposal services.
Contaminated packaging	:	Dispose of as unused product. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

IATA

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

IMDG Not dangerous goods

UN number	:	Not applicable
Proper shipping name	:	Not applicable
Transport hazard class	:	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

Standard for the Uniform Scheduling of Medicines and Poisons

Not applicable

SECTION 16. OTHER INFORMATION

Revision Date	:	02.06.2022
Date format	:	dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	US. ACGIH Threshold Limit Values
ACGIH BEI	:	US. ACGIH. BEIs. Biological Exposure Indices, as amended
AU NOEL	:	Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A), as amended
ACGIH / STEL	:	Short term exposure limit
ACGIH / TWA	:	Time weighted average
ACGIH /	:	Maximum limit value:
AU NOEL / PEAK	:	Peak Limitation:
AU NOEL / STEL	:	Short term exposure limit
AU NOEL / TWA	:	Time weighted average

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 Pre-

vention 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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