

SAFETY DATA SHEET

1. Product and company identification

Name of the chemical	Proteomic Stabilizer PROT1
Other means of identification	
Product code	PROT1, PROT1-250ML, PROT1-1L, MTS1P-100/CS
Recommended use of the chemical and restrictions on use	
Recommended use	Stabilization of whole blood samples.
Recommended restrictions	Research use only.
Name, address and phone number of manufacturer, importer or supplier:	
Company name	Smart Tube, Inc.
Address	6658 W. Sunset Road, Suite 100 Las Vegas, NV 89118 USA
Website	www.smarttubeinc.com
For product information call	+1 855 397 8467
For emergencies only call	CHEMTREC: 00801-14-8954 (Toll-Free)

2. Hazards identification

Hazard classification	
Physical hazards	Not classified.
Health hazards	Acute toxicity, oral Category 5 Acute toxicity, inhalation Category 3 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 1 Sensitization, skin Category 1A Germ cell mutagenicity Category 2 Carcinogenicity Category 1A Specific target organ toxicity following single exposure Category 3 respiratory tract irritation Specific target organ toxicity following repeated exposure (oral) Category 2 (kidneys)
Environmental hazards	Hazardous to the aquatic environment, acute hazard Category 3

Label elements

Symbols



Signal word

Danger

Hazard statement

May be harmful if swallowed. Toxic if inhaled. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause cancer. May cause respiratory irritation. May cause damage to organs (kidneys) through prolonged or repeated exposure by ingestion. Harmful to aquatic life.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapours. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF exposed or concerned: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixture

Chemical name	CAS Number	Concentration (%)
Diethylene glycol	111-46-6	3 - 7
Formaldehyde	50-00-0	3 - 7
Sodium chloride	7647-14-5	1 - 3

Composition comments	All concentrations are in percent by weight unless otherwise indicated. Components not listed are either non-hazardous or are below reportable limits.
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4. First aid measures

First aid measures for different exposure routes

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor/physician.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms and effects	Skin irritation. May cause redness and pain. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
Personal protection for first-aid responders	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.
Notes to physician	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Extinguishing media to avoid	No restrictions known.
Specific hazards during fire fighting	During fire, hazardous combustion products are released that may include: Carbon oxides.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Spill cleanup methods	<p>This product is miscible in water.</p> <p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Retain and dispose of contaminated wash water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.</p>

7. Handling and storage

Handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapours. Do not get this material in contact with eyes. Avoid contact with skin and clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Storage

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Exposure limits

Taiwan. OELs (Standards of Permissible Exposure Limits at Workplace), as amended

Components	Type	Value
Formaldehyde (CAS 50-00-0)	STEL	2.4 mg/m3
		2 ppm
	TWA	1.2 mg/m3
		1 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Formaldehyde (CAS 50-00-0)	STEL	0.3 ppm
	TWA	0.1 ppm

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

When working with liquids wear splash-proof chemical goggles and face shield unless full facepiece respiratory protection is worn.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Nitrile or neoprene gloves are recommended.
- material thickness: 3.9 mm
- break through time: 120 min
Other suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapour cartridge and full facepiece. Check with respiratory protective equipment suppliers.

Thermal hazards

No protection is ordinarily required under normal conditions of use.

General hygiene considerations

Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Liquid.

Colour

Colourless.

Odour

Formaldehyde.

Odour threshold

Not determined.

pH

7.8

Melting point/freezing point

Property has not been measured.

Boiling point, initial boiling point, and boiling range

100 °C (212 °F)

Flash point

Does not flash.

Auto-ignition temperature

Not applicable.

Flammability (solid, gas)	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit – upper (%)	Not applicable.
Vapour pressure	Property has not been measured.
Vapour density	Property has not been measured.
Evaporation rate	Property has not been measured.
Relative density	Property has not been measured.
Density	Not available.
Solubility(ies)	
Solubility (water)	Miscible in water.
Partition coefficient (n-octanol/water)	Not applicable, product is a mixture.
Decomposition temperature	Property has not been measured.
Viscosity	1 cP (25 °C (77 °F))
Kinematic viscosity	Property has not been measured.
Other data	
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
Particle size	Not applicable, material is a liquid.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidising agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Toxic if inhaled.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	May be harmful if swallowed. May cause damage to organs through prolonged or repeated exposure by ingestion.

Symptoms	Skin irritation. May cause redness and pain. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
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Information on toxicological effects

Acute toxicity	Toxic if inhaled. May be harmful if swallowed.
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Components	Species	Test Results
Diethylene glycol (CAS 111-46-6)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	11890 mg/kg
Formaldehyde (CAS 50-00-0)		
<u>Acute</u>		
Inhalation		
<i>Vapour</i>		
LC50	Rat	< 0.58 mg/l, 4 Hours
Oral		
LD50	Rat	460 mg/kg

Components	Species	Test Results
Other LD50	Rabbit	270 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye damage.	
Respiratory or skin sensitisation		
ACGIH sensitisation		
Formaldehyde (CAS 50-00-0)		Dermal sensitisation Respiratory sensitisation
Respiratory sensitisation	Does not meet classification criteria.	
Skin sensitisation	May cause an allergic skin reaction.	
Germ cell mutagenicity	Suspected of causing genetic defects.	
Carcinogenicity	May cause cancer.	
ACGIH Carcinogens		
Formaldehyde (CAS 50-00-0)		A1 Confirmed human carcinogen.
IARC Monographs. Overall Evaluation of Carcinogenicity		
Formaldehyde (CAS 50-00-0)		1 Carcinogenic to humans.
Taiwan OELs: Confirmed or suspected carcinogen		
Formaldehyde (CAS 50-00-0)		Confirmed or suspected carcinogen
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	May cause damage to organs (kidneys) through prolonged or repeated exposure by ingestion.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.	
Other information	Symptoms may be delayed.	

12. Ecological information

Ecotoxicity	Harmful to aquatic life.		
Components	Species		Test Results
Formaldehyde (CAS 50-00-0)			
Aquatic			
Algae	EC50	Desmodesmus subspicatus	3.48 mg/l, 72 hours
Crustacea	LC50	Daphnia pulex	5.8 mg/l, 48 hours
Fish	LC50	Morone saxatilis	6.7 mg/l, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulation	No data available on bioaccumulation.		
Bioaccumulative potential			
Octanol/water partition coefficient log Kow			
Formaldehyde (CAS 50-00-0)	0.35		
Mobility in soil	This product is miscible in water. Expected to be mobile in soil.		
Other hazardous effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Residual waste	Dispose in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
Local disposal regulations	Dispose in accordance with all applicable regulations.

14. Transport information

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

Applicable regulations

Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste
Regulations for the Labeling and Hazard Communication of Hazardous Chemicals
Toxic and Concerned Chemical Substances Control Act
Regulations for the Labeling and Materials Safety Data Sheets for Toxic and Concerned Chemical Substances
This material safety data sheet was prepared in accordance with the Regulation of Labeling and Hazard Communication of Hazardous Chemicals.

Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

Formaldehyde (CAS 50-00-0) Listed.

Regulations Governing Designating and Handling of Priority Management Chemicals

Formaldehyde (CAS 50-00-0)

Categories and Management of Handling for Toxic Chemical Substances

Formaldehyde (CAS 50-00-0)

Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Formaldehyde (CAS 50-00-0) Listed.

Toxic Chemical Control Act

Formaldehyde (CAS 50-00-0) Classification: 2,3

Specified Hazardous Chemicals (Guidelines for Prevention of Danger Posed by Special Hazardous Chemicals (CLA No. 659306)

Formaldehyde (CAS 50-00-0) Class 4

GHS Classification List: GHS implementation phase 1 and 2 (CLA No. 0960145703, 0970146313, and 0990146707)

Diethylene glycol (CAS 111-46-6)

Formaldehyde (CAS 50-00-0)

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

References

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
NLM: Hazardous Substances Data Base
National Toxicology Program (NTP) Report on Carcinogens
Taiwan. Dangerous Materials (Regulations for the Labeling and Hazard Communication of Hazardous Chemicals), as amended
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)
Taiwan. OELs (Standards of Permissible Exposure Limits at Workplace), as amended
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)
Taiwan. Toxic Materials (Toxic and Concerned Chemical Substances Control Act)

Disclaimer

Smart Tube, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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Not available.