MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical product name: **S TEST Reagent Cartridge CHO**

Name of manufacture: Hitachi Chemical Company Ltd.

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Name of section: Medical Business Unit

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2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

General product description: Reagent for determination of electrolytes with clinical analyzer

Ingredients and composition:

Chemical name	Composition (wt. %)	Chemical formula	CAS No.
*CHO Reagent (1)			
4-aminoantipyrine	<0.1	$C_{11}H_{13}N_3O$	83-07-8
Cholesterol esterase	<0.01	-	9026-00-0
Peroxidase	<0.01	-	9003-99-0
Surface-active agent	<1	Trade secret	Trade secret
Proclin 300	<3	Trade secret	Trade secret
Water, distilled	>90	H_2O	7732-18-5
*CHO Reagent (2)			
Cholesterol oxidase	<0.01	-	9028-76-6
N-ethyl-N-sulfobutyl-m-toluidine disodium salt	<0.1	Trade secret	Trade secret
Surface-active agent	<1	Trade secret	Trade secret
Sodium azide	<0.1	NaN_3	26628-22-8
Water, distilled	>95	H_2O	7732-18-5

UN Class: Not applicable UN No.: Not applicable

3. HAZARDS IDENTIFICATION

Emergency overview: Light yellow and transparent liquid, incombustible.

Physical and chemical hazards: Not combustible.

Adverse human health effects: No data for product. Adverse effects by sodium azide will be small.

Environmental effects: No data for product. Toxicity by sodium azide will be low as product.

4. FIRST – AID MEASURES

Inhalation: Remove to fresh air. If not breathing, open his airway, loosen his collar and belt and administer artificial respiration. If breathing is difficult, give oxygen.
Refer for medical attention in case of complaints.

Skin contact: Immediately wash skin with plenty of water with mild soap while removing contaminated clothing and shoes. If irritation is continued, seek medical attention.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes lifting upper and lower eyelids occasionally. Get medical attention immediately.

Ingestion: Rinse mouth with water and drink plenty of water. Induce vomiting, if person is conscious.
Get medical attention immediately.

5. FIRE – FIGHTING MEASURES

Flammable properties: Flash point Not applicable(Product) *In case of fire of package etc., see below.

Suitable extinguishing media: Dry chemical powder, carbon dioxide, foam, dry sand, water spray/fog

Specific hazards regarding with fire-fighting measure

- Immediately transfer all containers (if movable) to a safe place.
- Apply water from a safe distance to cool and protect surrounding area.
- Firefighters should wear proper protective equipment and self-breathing apparatus.

Hazardous combustion products: Carbon monoxide, smoke, fumes and oxides of carbon.

Toxic fumes and gases (carbon monoxide etc.) will form upon combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

- Evacuate personnel to safe area. Evacuate non- essential personnel.
- Wear proper protective equipment.

Environmental precautions:

- Do not wash away into sewer, watercourse or river.

Method for cleaning up:

- Absorb spill with paper towels etc. , then place in chemical waste container.

7. HANDLING AND STORAGE

Handling:

- Avoid shock, and do not fall or drop the container.
- In case of handling, wear proper protective equipment to avoid contact and inhalation.
- Use local exhaust ventilation.
- Wash hands, face and mouth after handling.
- Avoid release of this material into sewers or drainage.
- If feel abnormality in the body or abnormality on the body observed, make sure to get medical advice/attention after taking the emergency measures refer to section 4.

Storage:

- Store at temperature between 35 to 46F (2 to 8℃) and avoid freezing.
- Keep away from heat and direct sunlight.
- Specific materials to be avoided: None especially

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure control: Use this product only in a totally enclosed system or local exhaust ventilation.
Make available in the work area with emergency shower and eye washer.

Control parameters: ACGIH TLV (2011) [1]: (Reference)

TWA – STEL Ceiling 0.29 mg/m^3 (Sodium azide)

TWA: Time-Weighted Average STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

Engineering measure: Do not use in area without adequate ventilation and local exhaust ventilation

Personal protection equipment:

- Respiratory protection: Industrial canister gas masks.
- Eye protection: Safety goggles and/or a full face shield.
- Skin protection: Chemical – resistant gloves, impervious boots and apron or full – body suit.

9. PHYSICAL AND CHEMICAL PROPERTIES

	CHO Reagent (1)	CHO Reagent (2)
Appearance:	Light yellow and transparent liquid	Light yellow and transparent liquid
Odor:	No data	No data
Flash point:	Not flammable	Not flammable
Boiling point:	No data	No data
Melting point:	No data	No data
Density/Specific gravity:	No data	No data
Solubility in water:	Soluble	Soluble
pH:	6.5 (25℃)	7.0 (25℃)

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use and storage.

Materials to avoid: None

Hazardous decomposition products: Not generated.

Hazardous polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Route of entry: May cause absorption in the body by inhalation, skin and ingestion.

Acute toxicity [2]:

INHALATION;	LC_{50} rat	37 mg/m^3	(Sodium azide) (Reference)
ORAL ;	LD_{50} rat	45 mg/kg	(Sodium azide) (Reference)
	LD_{50} rat	1700 mg/kg	(4-aminoantipyrine) (Reference)
	LD_{50} rat	>90 ml/kg	(Water)
SKIN;	LD_{50} rabbit	20 mg/kg	(Sodium azide) (Reference)

LC_{50}: Lethal concentration 50% kill LD_{50}: Lethal dose 50% kill

Skin corrosion/irritation and Serious eye damage/eye irritation: No data.

Respiratory sensitization/Skin sensitization: No data.

Germ cell mutagenicity: No data.

Carcinogenicity: Sodium azide is classified as A4 in ACGIH.[1] (A4: Not classifiable as a human carcinogen)

Reproductive toxicity: No data

Specific target organ systemic toxicity – Single exposure [3]:

(Reference) Sodium azide causes damage to cardiovascular system, lungs, central nervous system.

Specific target organ systemic toxicity – Repeated exposure [3]:

(Reference) Sodium azide causes damage to cardiovascular system, central nervous system.

12. ECOLOGICAL INFORMATION

Biodegradability: Sodium azide is not biodegradable. [3]

Bioaccumulation: Sodium azide is not bioaccumulate. [3]

Eco-toxicity: No data for product. Toxicity by sodium azide will be low as product.

(Reference) Sodium azide is very toxic to aquatic environment.

Algae; ErC_{50} (96h) = 348 μ g/l (Sodium azide) [3]

13. DISPOSAL CONSIDERATIONS

Information on their safe handling of disposal:

・ Do not dump into sewers, on the ground or into any body of water.

Appropriate methods of disposal:

・ In case of plenty liquid waste, entrust the treatment (for disposal) to a licensed contractor.

(Continued on next page)

- Burn contaminated paper towel etc. in a chemical incinerator equipped with an afterburner and scrubber.
- Follow all regulations in your country or region.

14. TRANSPORT INFORMATION

Any especial precaution on the transport or conveyance:

- United Nation's recommendation and other international agreements on the transport and packaging.

UN Class:	Not applicable	UN Number:	Not applicable
Packing Group:	Not applicable	Marine Pollutant:	No

- During transportation, handle carefully according to Section 7 for information on handling and storage.
- Keep at temperature between 35 and 46F (2 and 8℃) and avoid freezing.
- Follow all regulations on the transport in your country or region.

15. REGULATORY INFORMATION

Regulatory information with regard to this preparation in your country or region should be examined by your own responsibility.

16. OTHER INFORMATION

References:

1) TLVs and BEIs (ACGIH 2011)
2) Registry of Toxic Effects of Chemical Substances (2011)
3) GHS Classification Data Base of National Institute of Technology and Evaluation (Japan)
4) IARC Monograph Vol.1-Vol.102 (2011)
5) Biodegradation and Bioaccumulation Data of Existing Chemicals Based on the CSCL Japan, edited Chemical Inspection & Testing Institute Japan (1992)

Inquiry of the information contained here in:

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