SAFETY DATA SHEET

Creation Date Oct-2013 **Revision Date** Oct-2018 **Revision Number** 2

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier
Product Description: **Benedict's reagent (quantitative)**
Cat No. Q35565

Relevant identified uses of the substance or mixture and uses advised against
Recommended Use Laboratory chemicals
Uses advised against No Information available

Details of the supplier of the safety data sheet
Company

Thermo Fisher Scientific India Pvt. Ltd
403-404, B-wing, Delphi, Hiranandani Business Park,
Powai, Mumbai 400076, INDIA.
E-mail address laboratorysolutions@thermofisher.com

Emergency Telephone Number

India Toll Free: 18 00 22 22 30
Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
REGULATION (EC) No 1272/2008

Chronic aquatic toxicity	Category 3

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16
R-phrase(s)

Risk Combination Phrases R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Label Elements

Hazard Statements
H412 - Harmful to aquatic life with long lasting effects
EUH032 - Contact with acids liberates very toxic gas

Other Hazards

SECTION 2. HAZARDS IDENTIFICATION

No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC-No.	Weight %	CAS-No	67/548/EEC Classification	CLP Classification - Regulation (EC) No 1272/2008	REACH No.
Water 7732-18-5	EEC No 231-791-2	70.5	7732-18-5	-	-	-
Citrate, sodium, dihydrate 6132-04-3	EEC No 200-675-3	14.1	6132-04-3	-	-	-
Potassium thiocyanate 333-20-0	EEC No. 206-370-1	8.8	333-20-0	Xn; R20/21/22 R32 R52-53	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Aquatic Chronic 3 (H412) (EUH032)	-
Sodium carbonate 497-19-8	EEC No. 207-838-8	5.3	497-19-8	Xi; R36	Eye Irrit. 2 (H319)	01-2119485498-19
Cupric sulfate 7758-98-7	EEC No. 231-847-6	1.27	7758-98-7	Xn; R22 Xi; R36/38 N; R50-53	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-
Potassium ferrocyanide 14459-95-1		0.03	14459-95-1	R52/53	Aquatic Chronic 3 (H412)	-

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

SECTION 4. FIRST AID MEASURES

Description of first aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion Do not induce vomiting. Clean mouth with water.

Inhalation	Move to fresh air
Notes to Physician	Treat symptomatically

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Extinguishing media which must not be used for safety reasons
No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Refer to Section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment.

Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Keep container tightly closed. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific End Uses

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Component	European Union	The United Kingdom	France	Belgium	Spain
Potassium thiocyanate		STEL: 15 mg/m³ 15 min TWA: 5 mg/m³ 8 hr Skin	VME: 5 mg/m³ 8 heures. CN Skin		
Potassium ferrocyanide		STEL: 15 mg/m³ 15 min TWA: 5 mg/m³ 8 hr Skin	VME: 5 mg/m³ 8 heures. CN Skin		VLA-ED: 1 mg/m³ 8 horas

Component	Italy	Germany	Portugal	The Netherlands	Finland
Potassium thiocyanate		MAK: 2 mg/m³ 8 Stunden. inhalable fraction Skin Peak: 2 mg/m³			
Cupric sulfate		MAK: 0.1 mg/m³ 8 Stunden. inhalable fraction Peak: 0.2 mg/m³			TWA: 1 mg/m³ 8 tunteina
Potassium ferrocyanide		MAK: 2 mg/m³ 8 Stunden. inhalable fraction Skin Peak: 2 mg/m³	TWA: 1 mg/m³ 8 horas		

Component	Austria	Denmark	Switzerland	Poland	Norway
Potassium thiocyanate					TWA: 5 mg/m³ 8 timer Skin
Cupric sulfate	STEL: 4 mg/m³ 15 Minuten STEL: 0.4 mg/m³ 15 Minuten MAK: 1 mg/m³ 8 Stunden MAK: 0.1 mg/m³ 8 Stunden		STEL: 0.2 mg/m³ 15 Minuten MAK: 0.1 mg/m³ 8 Stunden		
Potassium ferrocyanide			MAK: 1 mg/m³ 8 Stunden		TWA: 5 mg/m³ 8 timer Skin

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Potassium thiocyanate			Skin		
Sodium carbonate					TWA: 5 mg/m³ 8 hodinách. Ceiling: 10 mg/m³
Potassium ferrocyanide			Skin		

Component	Latvia	Lithuania	Luxembourg	Malta	Romania

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Sodium carbonate					TWA: 1 mg/m^3 8 ore STEL: 3 mg/m^3 15 minute
Potassium ferrocyanide	TWA: 4 mg/m^3				

Component	Russia - TWA	Slovak Republic	Slovenia	Sweden	Turkey
Cupric sulfate	TWA: 0.5 mg/m^3 Cu STEL: 1.5 mg/m^3 aerosol				

Biological limit values This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye Protection Safety glasses with side-shields

Hand Protection Protective gloves

Skin and body protection Long sleeved clothing

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls No information available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	No information available
odor	No information available
Boiling Point/Range	No information available.
Melting Point/Range	No information available.
Flash Point	No information available.
Autoignition Temperature	No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

Stable under normal conditions

Possibility of Hazardous Reactions

Hazardous Polymerization No information available
Hazardous Reactions . No information available.

Conditions to Avoid

Excess heat, Incompatible products.

Incompatible Materials

Strong oxidizing agents, Strong acids.

Hazardous Decomposition Products

None under normal use conditions

SECTION 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium thiocyanate	854 mg/kg (Rat)		
Sodium carbonate	4090 mg/kg (Rat)		
Cupric sulfate	300 mg/kg (Rat)	1000 mg/kg (Rabbit)	

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization No information available.
Mutagenic Effects No information available
Reproductive Effects No information available.
Developmental Effects No information available.
Target Organs Liver Respiratory system Eyes Kidney Skin
Endocrine Disruptor Information None known

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Potassium thiocyanate		Oncorhynchus mykiss: LC50: >100 mg/L/96h		Dahnia Magna: EC50: 11mg/L/48h
Sodium carbonate	242 mg/L EC50 = 120 h	Lepomis macrochirus: LC50: 300 mg/L/96h Gambusia affinis: LC50: 740 mg/L/96h		265 mg/L EC50 = 48 h
Cupric sulfate		0.1 mg/L LC50 96 h		EC50 = 0.024 mg/L/48h

Persistence and degradability

No information available

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Results of PBT and vPvB assessment

Other adverse effects

No information available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products Dispose of in accordance with local regulations

Contaminated Packaging Empty containers should be taken to local recyclers for disposal

SECTION 14. TRANSPORT INFORMATION

SECTION 14. TRANSPORT INFORMATION

IMDG/IMO Not regulated

ADR Not regulated

IATA Not regulated

SECTION 15. REGULATORY INFORMATION

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

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Water	231-791-2	-		X	X	-	X	-	X	X	X
Citrate, sodium, dihydrate	-	-		-	-	-	X	X	X	X	-
Potassium thiocyanate	206-370-1	-		X	X	-	X	X	X	X	X
Sodium carbonate	207-838-8	-		X	X	-	X	X	X	X	X
Cupric sulfate	231-847-6	-		X	X	-	X	X	X	X	X
Potassium ferrocyanide	-	-		-	-	-	X	X	X	X	-

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
CHINA - China Inventory of Existing Chemical Substances
AICS - Inventory of Chemical Substances
KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment

SECTION 16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R32 - Contact with acids liberates very toxic gas
R36 - Irritating to eyes

SECTION 16. OTHER INFORMATION

R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed
R36/38 - Irritating to eyes and skin
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Creation Date	Oct-2013
Next Revision Date	Oct-2023
Revision Summary	SDS section 1 updated and update to Format.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet