MATERIAL SAFETY DATA SHEET

Redox standard (200 mv)

SECTION 1: Identification of the substance/mixture and of the company/undertaking			
1.1	**Product identifiers**		
	Product name	:	Redox standard
	Brand	:	LABORT
	CAS-No.	:	-
1.2	**Relevant identified uses of the substance or mixture and uses advised against**		
	Identified uses	:	Laboratory chemicals, Manufacture of substances
1.3	**Details of the supplier of the safety data sheet**		
	LABORT FINE CHEM PVT LTD. 703-704 ICON BUSINESS CENTRE, OPP. CENTRAL MALL, NR. VALENTINE CINEMA, DUMAS ROAD, SURAT - 395007, (GUJARAT), INDIA. **PH:** 0091-261-2725761; 2725388 **FAX:** 0091-261-2725388 **E MAIL:** info@laboratorychemical.net **WEBSITE:** www.laboratorychemical.net		
1.4	**Emergency telephone number**		
	Emergency Phone #	:	**091-261-2725388**
SECTION 2: Hazards identification			
2.1	**Classification of the substance or mixture**		
	Classification according to Regulation (EC) No 1272/2008 Acute toxicity, Oral (Category 3), H301 Skin irritation (Category 2), H315 Eye irritation (Category 2), H319 Germ cell mutagenicity (Category 2), H341 Specific target organ toxicity - repeated exposure (Category 2), H373 Short-term (acute) aquatic hazard (Category 1), H400 Long-term (chronic) aquatic hazard (Category 1), H410		
2.2	**Label elements**		
	Labelling according Regulation (EC) No 1272/2008		
	Pictogram	:	
	Signal word	:	Danger
	Hazard statement(s)		

	H30 H315 H319 H341 H373 H410	Toxic if swallowed. Causes skin irritation. Causes serious eye irritation. Suspected of causing genetic defects. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.	
	Precautionary statement(s)		
	P201 P202 P273 P301 + P310 P302 + P352 P305 + P351 + P338	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
	Supplemental Hazard statements		
	none		
2.3	**Other hazards**		
	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.		
SECTION 3: Composition/information on ingredients			
3.1	**Mixtures**		
	Component	Classification	Concentration
	Tetrapotassium hexacyanoferrate		
	CAS-No 14459-95-1 EC-No. 237-722-2	Aquatic Chronic 3; H412	>= 10 - < 20 %
	tripotassium hexacyanoferrate(III)		
	CAS-No. 13746-66-2 EC-No. 237-323-3	Eye Irrit. 2; Aquatic Chronic 2; H319, H411	>= 2,5 - < 10 %
	Mercury dichloride		
	CAS-No. 7487-94-7 EC-No. 231-299-8 Index-No. 080-010-00-X	Acute Tox. 2; Skin Corr. 1B; Muta. 2; Repr. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H300, H314, H341, H361f, H372, H400, H410 M-Factor - Aquatic Acute: 100 - Aquatic Chronic: 10	>= 2,5 - < 3 %
SECTION 4: First aid measures			
4.1	**Description of first aid measures**		
	General advice Show this material safety data sheet to the doctor in attendance.		
	If inhaled After inhalation: fresh air. Call in physician.		
	In case of skin contact In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.		

	In case of eye contact After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
	If swallowed If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.
4.2	**Most important symptoms and effects, both acute and delayed** The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
4.3	**Indication of any immediate medical attention and special treatment needed** No data available
SECTION 5: Firefighting measures	
5.1	**Extinguishing media** **Suitable extinguishing media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. **Unsuitable extinguishing media** For this substance/mixture no limitations of extinguishing agents are given.
5.2	**Special hazards arising from the substance or mixture** Carbon oxides Nitrogen oxides (NOx) Hydrogen chloride gas Potassium oxides Mercury/mercury oxides. Iron oxides Hydrogen cyanide (hydrocyanic acid) Not combustible. Ambient fire may liberate hazardous vapours.
5.3	**Advice for firefighters** Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
5.4	**Further information** Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
SECTION 6: Accidental release measures	
6.1	**Personal precautions, protective equipment and emergency procedures** Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
6.2	**Environmental precautions** Do not let product enter drains.
6.3	**Methods and materials for containment and cleaning up** Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material. Dispose of properly. Clean up affected area.
6.4	**Reference to other sections** For disposal see section 13.
SECTION 7: Handling and storage	
7.1	**Precautions for safe handling** **Advice on safe handling** Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. **Hygiene measures** Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2	**Conditions for safe storage, including any incompatibilities** **Storage conditions** Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. **Storage stability** Recommended storage temperature 2 - 8 °C
7.3	**Specific end use(s)** Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
SECTION 8: Exposure controls/personal protection	
8.1	**Control parameters** **Ingredients with workplace control parameters**
8.2	**Exposure control**
	Personal protective equipment **Eye/face protection** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses **Skin protection** Required **Body Protection** protective clothing **Respiratory protection** required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. **Control of environmental exposure** Do not let product enter drains.
SECTION 9: Physical and chemical properties	
9.1	**Information on basic physical and chemical properties**

	Appearance Form	Form: clear, yellow liquid
	Colour	dark green
	Odour	No data available
	Odour Threshold	No data available
	pH	No data available
	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
	Upper/lower flammability or explosive limits	No data available
	Vapour pressure	No data available
	Vapour density	No data available
	Relative density Density	No data available 1,044 g/cm3
	Water solubility	at 20 °C soluble
	Partition coefficient: noctanol/water	No data available
	Auto-ignition temperature	No data available
	Decomposition temperature	No data available
	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
	Explosive properties	Not classified as explosive.
	Oxidizing properties	No data available
9.2	**Other safety information**	No data available

SECTION 10: Stability and reactivity

10.1	**Reactivity** No data available
10.2	**Chemical stability** The product is chemically stable under standard ambient conditions (room temperature).
10.3	**Possibility of hazardous reactions** Violent reactions possible with: The generally known reaction partners of water.
10.4	**Conditions to avoid** no information available
10.5	**Incompatible materials** Strong oxidizing agents
10.6	**Hazardous decomposition products** In the event of fire: see section 5

SECTION 11: Toxicological information

11.1	**Information on toxicological effects** **Mixture** **Acute toxicity** Oral: No data available Symptoms: Possible symptoms:, mucosal irritations Dermal: No data available **Skin corrosion/irritation** Mixture causes skin irritation. **Serious eye damage/eye irritation** Mixture causes serious eye damage. **Respiratory or skin sensitisation**

	No data available **Germ cell mutagenicity** Evidence of genetic defects. **Carcinogenicity** No data available **Reproductive toxicity** No data available **Specific target organ toxicity - single exposure** No data available **Specific target organ toxicity - repeated exposure** No data available **Aspiration hazard** No data available
11.2	**Additional Information** Mercury accumulates in almost all tissues, especially in the:, Kidney To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Other dangerous properties cannot be excluded. This substance should be handled with particular care. Handle in accordance with good industrial hygiene and safety practice. **Components** **Tetrapotassium hexacyanoferrate** **Acute toxicity** LD50 Oral - Rat - 3.613 mg/kg Inhalation: No data available Dermal: No data available Dermal: No data available **Skin corrosion/irritation** Skin - Rabbit Result: No skin irritation (OECD Test Guideline 404) **Serious eye damage/eye irritation** Eyes - Rabbit Result: Mild eye irritation (OECD Test Guideline 405) **Respiratory or skin sensitization** - Guinea pig Result: Did not cause sensitization on laboratory animals. **Germ cell mutagenicity** No data available **Carcinogenicity** Did not show carcinogenic effects in animal experiments. **Reproductive toxicity**

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

tripotassium hexacyanoferrate(III)

Acute toxicity
LD50 Oral - Rat - > 5.110 mg/kg
(OECD Test Guideline 401)
Inhalation: No data available
LD50 Dermal - Rat - male and female - > 2.000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Human
Result: No skin irritation
(OECD Test Guideline 439)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)

Germ cell mutagenicity
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Mercury dichloride

Acute toxicity
LD50 Oral - 5,1 mg/kg
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Severe skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Severe eye irritation - 24 h

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
In vitro tests showed mutagenic effects which were not observed with in vivo test.

Carcinogenicity
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Reproductive toxicity
Suspected human reproductive toxicant Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

SECTION 12: Ecological information

12.1	**Toxicity**	
	Mixture	No data available
12.2	**Persistence and degradability** No data available	
12.3	**Bioaccumulative potential** No data available.	
12.4	**Mobility in soil** No data available	
12.5	**Results of PBT and vPvB assessment** This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.	
12.6	**Other adverse effects** No data available **Components** **Tetrapotassium hexacyanoferrate** No data available Toxicity to daphnia and other aquatic: EC50 - Daphnia - 32 mg/l - 48 h Remarks: **tripotassium hexacyanoferrate(III)** Toxicity to fish: static test LC50 - Cyprinus carpio (Carp) - > 100 mg/l - 96 h (OECD Test Guideline 203) Toxicity to daphnia and other aquatic: static test EC50 - Daphnia magna (Water flea) - 59 mg/l - 48 h (OECD Test Guideline 202)	

	invertebrates Toxicity to algae: static test ErC50 - Pseudokirchneriella subcapitata - 3,1 mg/l – 72 h (OECD Test Guideline 201) Toxicity to bacteria: static test EC50 - activated sludge - > 1.000 mg/l (OECD Test Guideline 209) **Mercury dichloride** Toxicity to fish: mortality LOEC - Lates calcarifer - 0,113 mg/l - 96,0 h LC50 - Oncorhynchus mykiss (rainbow trout) - 0,016 mg/l – 96,0 h Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 0,002 mg/l - 48 h Toxicity to algae: Growth inhibition EC50 -Ditylum brightwellii - 0,01mg/l - 5 d

SECTION 13: Disposal considerations			
13.1	**Waste treatment methods** **Product** See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.		
SECTION 14: Transport information			
14.1	**UN number**		
	ADR/RID: 2024	IMDG: 2024	IATA: 2024
14.2	**UN proper shipping name**		
	ADR/RID: MERCURY COMPOUND, LIQUID, N.O.S. (Mercury dichloride) IMDG: MERCURY COMPOUND, LIQUID, N.O.S. (Mercury dichloride) IATA: Mercury compound, liquid, n.o.s. (Mercury dichloride)		
14.3	**Transport hazard class(es)**		
	ADR/RID: 6.1	IMDG: 6.1	IATA: 6.1
14.4	**Packaging group**		
	ADR/RID: III	IMDG: III	IATA: III
14.5	**Environmental hazards**		
	ADR/RID: yes	IMDG Marine pollutant: yes	IATA: No
14.6	**Special precautions for user** No data available		
SECTION 15: Regulatory information			
15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture** This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. **Authorisations and/or restrictions on use** REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Mercury dichloride **National legislation**		

	Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : ACUTE TOXIC : ENVIRONMENTAL HAZARDS **Other regulations** Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work.
15.2	**Chemical safety assessment** For this product a chemical safety assessment was not carried out
SECTION 16: Other information	
	Further information LABORT FINE CHEM PVT LTD. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. LABORT FINE CHEM PVT LTD. Makes no representations or warranties, either express or implied, including without limitation any warranties or merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, LABORT FINE CHEM PVT LTD. will not be responsible for damages resulting from use of or reliance upon this information. Revised on: 01/12/21 Revision: 01