

RX200 - REDOX standard + 200mV

Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Code: RX200
Product name: REDOX standard + 200mV

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use: Standard solution for process verification and control. Applies to codes 51100303, EE51100303, EH51100303.

Identified Uses	Industrial	Professional	Consumer
Standard solution for the verification and quality control of redox potential measurement systems.	✓	✓	-

1.3. Details of the supplier of the safety data sheet

Name: GIORGIO BORMAC srl
Full address: via della meccanica, 25
District and Country: 41012 Carpi Italia (MO)
Tel.: +39 059 653274
Fax: +39 059 653282

e-mail address of the competent person responsible for the Safety Data Sheet: sds@giorgiobormac.com

Supplier: GIORGIO BORMAC srl

1.4. Emergency telephone number

For urgent inquiries refer to: +44 121 507 4123

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2020/878.

Hazard classification and indication: --

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms: --

Signal words: --

Hazard statements:

EUH210

Safety data sheet available on request.

EUH208

Contains: 5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
May produce an allergic reaction.

Precautionary statements: --

RX200 - REDOX standard + 200mV**SECTION 2. Hazards identification ... / >>****2.3. Other hazards**

On the basis of available data, the product does not contain any PBT or vPvB in percentage $\geq$ than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration $\geq$ 0.1%.

SECTION 3. Composition/information on ingredients**3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one		
INDEX	613-167-00-5	$0,00015 \leq x < 0,0014$
EC		Acute Tox. 2 H310, Acute Tox. 2 H330, Acute Tox. 3 H301, Skin Corr. 1C H314, Eye Dam. 1 H318, Skin Sens. 1A H317, Aquatic Acute 1 H400 M=100, Aquatic Chronic 1 H410 M=100, EUH071, Classification note according to Annex VI to the CLP Regulation: B
CAS	55965-84-9	Skin Sens. 1A H317: $\geq 0,0015\%$
REACH Reg.	01-2120764691-48-XXXX	LD50 Oral: 64 mg/kg, LD50 Dermal: 87 mg/kg, LC50 Inhalation mists/powders: 0,33 mg/l/4h

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures**4.1. Description of first aid measures**

No episodes of harm to the staff authorised to use the product have been reported. The following general measures should be adopted as necessary:

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Do not give anything by mouth to an unconscious person.

EYES and SKIN: Wash with plenty of water. In the event of persistent irritation, get medical advice/attention.

Rescuer protection

Information not available

4.2. Most important symptoms and effects, both acute and delayed

No episodes of damage to health ascribable to the product have been reported.

4.3. Indication of any immediate medical attention and special treatment needed

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one

Treat symptomatically

Means to have available in the workplace for specific and immediate treatment

Information not available

SECTION 5. Firefighting measures**5.1. Extinguishing media**

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

RX200 - REDOX standard + 200mV**SECTION 5. Firefighting measures ... / >>**

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one

Dangerous combustion products:

Nitrogen oxides (NOX)

Magnesium oxides

Carbon dioxide (CO₂)

Carbon monoxide

Hydrochloric acid gas

5.3. Advice for firefighters**GENERAL INFORMATION**

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Use breathing equipment if fumes or powders are released into the air. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Confine using earth or inert material. Collect as much material as possible and eliminate the rest using jets of water. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage**7.1. Precautions for safe handling**

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use.

7.2. Conditions for safe storage, including any incompatibilities

Keep the product in clearly labelled containers. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory references:

DEU Deutschland Forschungsgemeinschaft MAK- und BAT-Werte-Liste 2022 Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe Mitteilung 58

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one**Threshold Limit Value**

Type	Country	TWA/8h mg/m ³	ppm	STEL/15min mg/m ³	ppm	Remarks / Observations
MAK	DEU	0,2		0,4		INHAL

Legend:

RX200 - REDOX standard + 200mV**SECTION 8. Exposure controls/personal protection ... / >>**

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

HAND PROTECTION

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, permeability time. The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (see standard EN ISO 16321).

RESPIRATORY PROTECTION

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. Use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387).

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Properties	Value	Information
Appearance	clear liquid	
Colour	yellow	
Odour	odourless	
Melting point / freezing point	not available	
Initial boiling point	100 °C	
Flammability	not flammable	
Lower explosive limit	not applicable	
Upper explosive limit	not applicable	
Flash point	not applicable	
Auto-ignition temperature	not applicable	
Decomposition temperature	not available	
pH	not available	
Kinematic viscosity	not available	
Solubility	completely soluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1	
Relative vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information**9.2.1. Information with regard to physical hazard classes**

Information not available

9.2.2. Other safety characteristics

Explosive properties	not applicable
Oxidising properties	not applicable

SECTION 10. Stability and reactivity**10.1. Reactivity**

There are no particular risks of reaction with other substances in normal conditions of use.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
Nitrogen oxides, sulfur oxides, carbon oxides

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008Metabolism, toxicokinetics, mechanism of action and other information

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one

Symptoms:

Gastrointestinal disturbances

Severe allergic reaction, bronchial spasm and anaphylactic shock

Seriously corrosive and necrotizing the tissues

Outburst

Enfata corrosion of the mucous membranes

Annexed view

Nausea

Itchy

Dermatitis

Local irritation

Risks:

It can cause an allergic skin reaction

Causes serious eye injuries

Causes serious burns

Information on likely routes of exposure

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one

Inhalation, contact with eyes, contact with the skin, ingestion

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

RX200 - REDOX standard + 200mV**SECTION 11. Toxicological information ... / >>**ACUTE TOXICITY

ATE (Inhalation) of the mixture: Not classified (no significant component)
ATE (Oral) of the mixture: Not classified (no significant component)
ATE (Dermal) of the mixture: Not classified (no significant component)

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
LD50 (Dermal): 87 mg/kg STA coniglio Metodo: coniglio
LD50 (Oral): 64 mg/kg STA ratto Metodo: calcolo
LC50 (Inhalation mists/powders): 0,33 mg/l/4h STA ratto Atmosfera: polvere/nebbia. Metodo: calcolo.

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
Corrosive for the rabbit.
Corrosivo, category 1C -when exposure reactions between 1 and 4 hours and observation times up to 14 days

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
It can cause irreversible damage to the eyes - rabbit.

RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction.

Contains:

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one

Skin sensitization

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
The product is a sensitivity of the skin, subcategory 1A.

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
Animal testing did not reveal any carcinogenic effects

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
It does not contain ingredients included in the list of toxic products for reproduction

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

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Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. Toxicity

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
CL50 (Lepomis macrochirus (Bluegill fish-back)): 0.28 mg/l/96 h
Ce50 (active mud): 4.5 mg/l type of test: breathing inhibitor
Acute M factor: 100
Chronic M factor: 100

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
LC50 - for Fish 0,19 mg/l/96h Oncorhynchus mykiss (Trota iridea)
EC50 - for Crustacea 0,16 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants 0,027 mg/l/72h Pseudokirkchneriella subcapitata

12.2. Persistence and degradability

5-chloro-2-methyl-2H-isothiazol-3-one; 2-methyl-2H-isothiazol-3-one
Result: Not immediately biodegradable.
Biodegradation: 30%
Exposure time: 28 d
Method: OECD Test Guideline 301B

12.3. Bioaccumulative potential

Information not available

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage $\geq$ than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations**13.1. Waste treatment methods**

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

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SECTION 14. Transport information ... / >>

14.1. UN number or ID number

not applicable

14.2. UN proper shipping name

not applicable

14.3. Transport hazard class(es)

not applicable

14.4. Packing group

not applicable

14.5. Environmental hazards

not applicable

14.6. Special precautions for user

not applicable

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU: NoneRestrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006Contained substance

Point 75

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

not applicable

Substances in Candidate List (Art. 59 REACH)On the basis of available data, the product does not contain any SVHC in percentage $\geq$ than 0,1%.Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Acute Tox. 2

Acute toxicity, category 2

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SECTION 16. Other information ... / >>

Acute Tox. 3	Acute toxicity, category 3
Skin Corr. 1C	Skin corrosion, category 1C
Skin Sens. 1A	Skin sensitization, category 1A
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.
EUH210	Safety data sheet available on request.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)

RX200 - REDOX standard + 200mV**SECTION 16. Other information ... / >>**

- 20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
- 21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
- 22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
- 23. Delegated Regulation (UE) 2023/707
- 24. Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)
- 24. Delegated Regulation (UE) 2023/1435 (XX Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

03.