



SAFETY DATA SHEET

Issuing Date 01-Dec-2010

Revision Date 17-Jun-2014

Version 2.1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name Sentinel R200
Pure substance/mixture Mixture.

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

Recommended Use Cleaning agent for heat pump circuits.

Uses advised against None known.

1.3 Details of the supplier of the safety data sheet

Company Information SENTINEL PERFORMANCE SOLUTIONS LTD

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1.4 Emergency telephone

Emergency telephone +44 (0) 1928 704 339 (24 hours/ 7 days)

Section 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Not classified

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Not classified

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP/GHS)

Signal Word

None

Hazard Statements

None

Precautionary statements

None

2.3 Other hazards

May cause skin and eye irritation. Ingestion may cause irritation of the gastrointestinal tract.

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical Name	EC-No	CAS-No	w/w%	Classification (67/548/EEC)	Classification (EU Reg. 1272/2008)	REACH Registration Number
Potassium hydroxide	215-181-3	1310-58-3	<1	Xn; R22 C; R35	Acute Tox. 4 (H302) Skin Corr. 1A (H314)*	01-2119487136-33-XXXX

For the full text of R-phrases and H-Statements see Section 16

* Substance with Workplace Exposure Limit. See Section 8.

Section 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms develop obtain medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. If symptoms develop obtain medical attention.
Ingestion	Do NOT induce vomiting. Wash out mouth with water and give 100 - 200 ml of water to drink. If symptoms develop obtain medical attention.
Inhalation	Remove patient from exposure, keep warm and at rest. If symptoms develop obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Main Symptoms	May cause skin and eye irritation. Ingestion may cause irritation of the gastrointestinal tract.
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4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.
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Section 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media

Water spray, dry chemical, carbon dioxide (CO₂), or foam.

Extinguishing media which shall not be used for safety reasons

Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating and toxic gases and vapors: Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Sulfur oxides. Chlorine. Phosphorus oxides.

5.3 Advice for firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear. Cool containers / tanks with water spray.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Avoid contact with the skin and the eyes. Avoid breathing vapors or mists. Use personal protective equipment.

6.2 Environmental precautions

Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

6.4 Reference to other sections

SECTION 8: Exposure controls/personal protection. SECTION 13: Disposal considerations.

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Remove and wash contaminated clothing before re-use.

Do not eat, drink or smoke during work. Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in the original container/package in a cool well-ventilated place.

7.3 Specific end use(s)

Cleaning agent for heat pump circuits.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Chemical Name	Potassium hydroxide 1310-58-3
The United Kingdom	STEL: 2 mg/m ³
France	STEL: 2 mg/m ³
Spain	STEL: 2 mg/m ³
Portugal	Ceiling: 2 mg/m ³
Finland	STEL: 2 mg/m ³ Ceiling: 2 mg/m ³
Denmark	Ceiling: 2 mg/m ³
Austria	TWA: 2 mg/m ³
Switzerland	TWA: 2 mg/m ³
Poland	STEL: 1 mg/m ³ TWA: 0.5 mg/m ³
Norway	Ceiling: 2 mg/m ³
Ireland	STEL: 2 mg/m ³

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

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8.2 Exposure controls

Appropriate engineering controls Provide adequate ventilation, including appropriate local extraction, to ensure that occupational exposure limits are not exceeded.

Personal protective equipment

Eye Protection	Goggles (EN 166)
Hand Protection	Protective gloves (EN 374)
Skin and body protection	Long sleeved clothing
Respiratory protection	Not normally required. In case of insufficient ventilation wear suitable respiratory equipment

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls Avoid release to the environment

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Odor	Odorless
Color	Colourless
Odor Threshold	Not applicable

Property Values

pH 12.9

Melting/freezing point

Freezing Point

Boiling point/boiling range

Flash Point

Evaporation rate

Flammability (solid, gas)

Flammability Limits in Air

upper flammability limit

lower flammability limit

Vapor pressure

Vapor density

Relative density 1.01

Water solubility

Solubility in other solvents

Partition coefficient:

n-octanol/water

Auto-ignition temperature

Decomposition temperature

Viscosity, kinematic

Viscosity, dynamic

Remarks • Methods

@ 25 °C

No information available

No information available

No information available

Not flammable

No information available

Not applicable

Not flammable

No information available

No information available

@ 25 °C

Miscible

No information available

No information available

Not flammable

No information available

No information available

No information available

Explosive properties Not explosive

Oxidizing properties Not oxidizing

9.2 Other information

No information available

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No information available.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Acids.

10.6 Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors: Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Sulfur oxides. Chlorine. Phosphorous oxides.

Section 11: TOXICOLOGICAL INFORMATION

Inhalation	No known effect based on information supplied.
Eye contact	May cause eye irritation.
Skin contact	May cause skin irritation.
Ingestion	Ingestion may cause irritation of the gastrointestinal tract.

11.1 Information on toxicological effects

Acute toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium hydroxide	365mg/kg (Rat)	-	-

Skin corrosion/irritation	Based on available data, classification criteria are not met.
Serious eye damage/irritation	Based on available data, classification criteria are not met.
Respiratory or skin sensitisation	Based on available data, classification criteria are not met.
Mutagenicity	Based on available data, classification criteria are not met.
Carcinogenicity	Based on available data, classification criteria are not met.
Reproductive toxicity	Based on available data, classification criteria are not met.
STOT - Single exposure	Based on available data, classification criteria are not met.
STOT - Repeated exposure	Based on available data, classification criteria are not met.
Aspiration hazard	Based on available data, classification criteria are not met.
Other information	No information available.

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity

WGK Classification 1

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Chemical Name	Bioconcentration factor (BCF)	log Pow
Potassium hydroxide	-	0.65 0.83

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from residues / unused products

Disposal should be in accordance with local, state or national legislation.

Contaminated packaging

Clean container with water. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14: TRANSPORT INFORMATION

Not classified as hazardous for transport.

	ADR/RID/ADN	ICAO/IATA	IMDG / IMO
14.1 UN Number	-	-	-
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental Hazards	Not Classified	Not Classified	Not Classified
14.6 Special precautions for user	No special precautions are needed in handling this material		
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code		-	

Section 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety data sheet complies with the requirements of Regulations (EC) No. 1907/2006 and No. 453/2010

WGK Classification 1

15.2 Chemical Safety Assessment

Chemical Safety Assessment has not been carried out.

Section 16: OTHER INFORMATION**Full text of R-phrases referred to under sections 2 and 3**

R22 - Harmful if swallowed
R35 - Causes severe burns

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage

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Revision Note All sections.

Disclaimer

The information and recommendations contained herein are based upon data believed to be up-to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information and recommendations contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by (incorrect) use, handling, purchase, resale, or exposure to our product. Customers and users of our product must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.

