



Product
Code:

X100 Rapid Dose
Version: 4

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Date Prepared: August 2014

1. IDENTIFICATION

Identification of the substance/preparation **X100 Rapid Dose**
Use of the substance/preparation Corrosion inhibitor for central heating systems

Company Identification	Manufactured by	Distributed by
	Sentinel Performance Solutions Ltd.	Douglas Products and Packaging
Address	7650 Daresbury Park Warrington Cheshire, WA4 4BS UK	1550 East Old 210 Highway Liberty Missouri, 64068 USA
Telephone for further information	+44 (0) 1928 704 330	(816)-781-4250 (8am - 5pm)
Emergency Phone No.	+44 (0) 1928 704 339 (24/7)	Chemtrec (800) 424-9300 (24/7)
Fax:	+44 (0) 1928 562 070	(816)-781-1043

2. HAZARD IDENTIFICATION

GHS-US Classification

Not classified as hazardous under HCS 2012

GHS-US labeling

Hazard pictograms (GHS-US) : None required
Signal word (GHS-US) : None required
Hazard statements (GHS-US) : None required
Precautionary statements (GHS-US) : None required

Special labeling for Aerosols :

Pressurized container: Do not pierce or burn, even after use.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.



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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical description

Neutral solution of inorganic and organic corrosion inhibitors and salts.

Hazardous component(s)

Ingredient	CAS Number	EC Number	w/w %	Classification (67/548/EEC)	Classification (GHS)
Sodium nitrate	7631-99-4	231-554-3	1 - 5	O; R8-22	Ox. Solid Cat 3; H272 Acute Tox. Cat 4; H302
Disodium molybdate	7631-95-0	231-551-7	1 - 5	None *	None *
Benzotriazole	95-14-7	202-394-1	1 - 3	Xn; R20/22- 36-52/53	Acute Tox. Cat 4; H302 Acute Tox. Cat 4; H332 Eye Irrit. Cat 2; H319 Aq Chronic Cat 3; H412

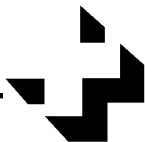
Please refer to Section 16 where the full text of each relevant R phrase and H Statement is listed.

* Has workplace exposure limit, please refer to Section 8 for details.

4. FIRST-AID MEASURES

Inhalation	Remove patient to fresh air, allow to rest and keep warm. Seek medical attention if symptoms develop.
Skin contact	Wash with plenty of water. Remove any contaminated clothing and launder before reuse. Seek medical attention if symptoms develop.
Eye contact	Flush immediately with plenty of water for at least 15 minutes, keeping eyelids open. Seek medical attention if symptoms develop.
Ingestion	DO NOT induce vomiting! Rinse mouth out with water, but do not give anything to drink. Seek medical attention if symptoms develop.
Personal precautions	Ensure that those giving first aid treatment do not get contaminated by product spills, etc. Wear suitable protective clothing, gloves and eye protection. See also Section 8.

Prolonged or repeated exposure may cause transient skin, eye or respiratory tract irritation. Ingestion of large amounts may cause slight gastrointestinal irritation.



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5. FIRE-FIGHTING MEASURES

- Suitable	Water spray, foam, carbon dioxide, dry powder.
- Not to be used	Water jet.
Special exposure hazards	Exposure to heat may cause bursting of aerosol containers. Oxides of carbon, nitrogen and phosphorus evolved in fire.
Special protective equipment for fire fighters	Protective clothing and self-contained breathing apparatus.
Flash point	Not flammable.

6. ACCIDENTAL RELEASE MEASURES

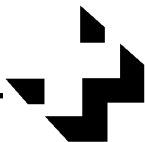
Personal precautions	Wear suitable protective clothing, gloves and eye protection. See Section 8 for details. Keep unnecessary personnel away.
Environmental precautions	Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. In case of large spill, inform local authorities.
Methods for cleaning up	
- on soil	Collect undamaged containers. In case of liquid spills, absorb onto inert material such as earth, soil or specialist absorbent. Collect and place into sealed container for safe disposal (see Section 13).
- on water	Collect undamaged containers.

7. HANDLING AND STORAGE

Handling	Avoid contact with skin and eyes. Do not ingest or inhale vapors, mists or spray. Do not eat, drink or smoke during work. Wash hands thoroughly after use.
Storage	Keep in original containers. Store in cool, well ventilated area below 50 °C/122 °F. Keep away from heat and sources of ignition. Keep away from direct sunlight. Protect from frost.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Recommended engineering controls	Ensure good ventilation. Arrange for eye wash possibility.
Control parameters:	Molybdenum compounds (as Mo) soluble OSHA PEL - 5 mg/m ³ 8 hr TWA ACGIH TLV - 5 mg/m ³ 8 hr TWA
Monitoring procedures	Not required



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Personal protection

Always check applicability with your supplier of protective equipment.

- Respiratory protection In case of insufficient ventilation, wear full face or half face mask fitted with filter suitable for liquid particulates.
- Skin protection Laboratory coat or overalls if splashing or repeated contact with product is likely.
- Eye protection Chemical goggles.
- Hand protection Plastic, impervious gloves for protection against unintentional short-term contact. However, since glove performance is governed by many variables, it is strongly recommend that specialist advice on the selection and use of protective gloves is sought.

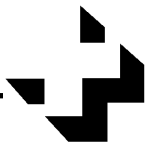
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Aerosol can containing yellow to amber aqueous liquid
Odor	Mild
Odor threshold	No information available
pH (concentrated product)	6.4
Melting point (°C)	-13 [9°F]
Boiling point/range (°C)	104 [219°F]
Flash point	Not flammable
Evaporation rate (ether=1)	< 1
Flammability (solid/gas)	Not relevant
Vapor pressure	No information available
Vapor density	No information available
Explosive properties	None
Relative Density	1.22
Solubility in water (% by weight)	Completely miscible
Partition coefficient (Octanol/water)	Not relevant
Autoignition temperature	Not flammable
Decomposition temperature	No information available
Viscosity	No information available
Oxidizing properties	None

Note: These are typical values and do not constitute a specification.

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use.
Conditions to avoid	Do not expose to heat or flames. Protect from freezing.
Materials to avoid	None known.
Hazardous decomposition products	Oxides of carbon, nitrogen and phosphorus evolved in fire.



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11. TOXICOLOGICAL INFORMATION

Test data:	No data available on product.
Calculated from ingredient data:	
- Oral LD ₅₀ rat (mg/kg)	> 5000 Not considered hazardous under the GHS classification system.
Exposure hazard:	
- Inhalation	Prolonged or repeated exposure may cause transient irritation.
- Skin contact	Prolonged or repeated exposure may cause transient irritation.
- Eye contact	Prolonged or repeated exposure may cause transient irritation.
- Ingestion	Likely symptoms are slight gastrointestinal irritation.
Other data	None available.

12. ECOLOGICAL INFORMATION

Aquatic toxicity:	No data available on product.
Calculated data based on ingredients	
- Fathead minnow (mg/l) LC ₅₀ 96 Hr:	1840
NOEL :	840
- Daphnia Magna (mg/l) LC50 48 Hr:	2040
NOEL :	1050
Persistence and degradability	
All organic components are biodegradable.	
Bioaccumulative potential	
- Bioaccumulation	Not bioaccumulating
Mobility in soil	
Summary	No information available
Environmental effects:	Not classified as hazardous to the environment under the GHS classification system.



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13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

14. TRANSPORTATION INFORMATION

UN number	1950
UN proper shipping name	Aerosols, Non-toxic, non-flammable gas
Transport hazard class	2.2
Packing group	Not Applicable
Environmental hazards	None
Special precautions for user	None
Limited quantity	1 litre.

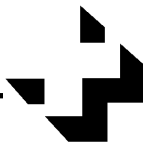
15. REGULATORY INFORMATION

Inventory Status TSCA	All ingredients of this product are listed unless specifically exempted.
California Proposition 65	Does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
EU	All ingredients of this product are listed in EINECS or ELINCS, unless specifically exempted under EU Directive 67/548/EEC (as amended).
Right to know classification:	None are listed in CA, PA, MN, MA, MI, FL and NJ.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions, which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Hazardous Material Information (HMIS)		National Fire Protection Association (NFPA)	
Health	0	0	Health
Flammability	0	0	Fire
Physical	1	0	Instability
Personal Protection	B		NA



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Health	4 Deadly	3 Extreme Danger	2 Dangerous	1 Slight hazard	0 No hazard
Flammability/Fire	4 < 73 °F	3 < 100 °F	2 < 200 °F	1 >200 °F	0 Will not burn
Physical/Instability	4 - May detonate	3 Explosive	2 Unstable	1 Normally stable	0 Stable

Version number	4
Date prepared	August 2014
Supersedes Version	3 dated June 2013
Nature of revision	Updated to HCS 2012.

R-phrases used in Section 3	8	Contact with combustible material may cause fire
	20/22	Harmful by inhalation and if swallowed
	22	Harmful if swallowed
	36	Irritating to eyes
	52/53	Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment

H-statements used in Section 3	H272	May intensify fire; oxidiser
	H302	Harmful if swallowed
	H319	Causes serious eye irritation
	H332	Harmful if inhaled
	H412	Harmful to aquatic life with long lasting effects

Based on HSC 2012 and EU Regulation 1907/2006

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1. PRODUCT AND COMPANY INFORMATION

Identification of the substance/preparation	Sentinel X100
Use of the substance/preparation	Scale & corrosion inhibitor for central heating systems
Company Identification	Sentinel Performance Solutions Ltd.
Manufactured by	Douglas Products and Packaging
Address and Telephone No.	1550 East Old 210 Highway Liberty Missiouri, 64068 USA
Telephone for further information:	(816)-781-4250 (8am - 5pm)
Emergency Phone No.	Chemtrec (800) 424-9300 (24/7)
Fax:	(816)-781-1043

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance and odour:

Appearance	Colourless to yellow liquid
Odour	Mild odour

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Statements of Hazard

CAUTION: MAY BE HARMFUL IF SWALLOWED

Xn - Harmful



MAY CAUSE SKIN, EYE AND RESPIRATORY TRACT IRRITATION

Potential Health Effects

Primary routes of entry by skin contact and ingestion.

Contains ingredients that may be harmful by inhalation and if swallowed and may be irritating to skin, eyes and the respiratory system. Also contains an oxidising ingredient.

Consideration of the hazards of the mixture as supplied suggest that the potential health effects will actually be less dangerous.

Eye contact - prolonged or repeated exposure may cause transient irritation. Skin contact - prolonged or repeated exposure may cause transient irritation. Inhalation - prolonged or repeated exposure may cause transient irritation. Ingestion of large amounts may cause slight gastrointestinal irritation.



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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical description

Neutral solution of inorganic and organic corrosion inhibitors and salts.

Hazardous component(s)

Ingredient	CAS Number	EC Number	% by weight	Symbol	Risk Phrases
Sodium nitrate	7631-99-4	231-554-3	< 5	O	8-22-36/37/38
Sodium molybdate	7631-95-0	231-551-7	< 5	None	None - has PEL & TLV

Please refer to section 16 (R phrases used in Section 3), where the full text of each relevant R phrase is listed.

4. FIRST-AID MEASURES

Inhalation	Remove patient to fresh air, allow to rest and keep warm. Seek medical attention if symptoms develop.
Skin contact	Wash with plenty of water. Remove any contaminated clothing and launder before reuse. Seek medical attention if symptoms develop.
Eye contact	Flush immediately with plenty of water for at least 15 minutes, keeping eyelids open. Seek medical attention if symptoms develop.
Ingestion	DO NOT induce vomiting! Rinse mouth out with water, but do not give anything to drink. Seek medical attention if symptoms develop.
Personal precautions	Ensure that those giving first aid treatment do not get contaminated by product spills, etc. Wear suitable protective clothing, gloves and eye protection. See also Section 8.

5. FIRE-FIGHTING MEASURES

- Suitable	Water, foam, carbon dioxide, dry powder.
- Not to be used	None.
Special exposure hazards	Oxides of carbon and nitrogen evolved in fire.
Special protective equipment for fire fighters	Protective clothing and self-contained breathing apparatus.
Flash point	Not flammable.



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6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear suitable protective clothing, gloves and eye protection. See Section 8 for details. Keep unnecessary personnel away.
Environmental precautions	Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. In case of large spill, inform local authorities.
Methods for cleaning up	
- on soil	Absorb onto inert material such as earth, soil or specialist absorbent. Collect and place into sealed container for safe disposal (see Section 13).
- on water	None known.

7. HANDLING AND STORAGE

Handling	Avoid contact with skin and eyes. Do not ingest or inhale vapours or spray.
Storage	Keep in original containers. Keep container tightly closed. Store in cool, well ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Recommended engineering controls	Ensure good ventilation. Arrange for eye wash possibility.
Control parameters:	Molybdenum compounds (as Mo) soluble OSHA PEL - 5 mg/m ³ 8 hr TWA ACGIH TLV - 5 mg/m ³ 8 hr TWA
Monitoring procedures	Not required
Personal protection	
Always check applicability with your supplier of protective equipment.	
- Respiratory protection	In case of insufficient ventilation, wear full face or half face mask fitted with filter suitable for liquid particulates.
- Skin protection	Laboratory coat or overalls if splashing or repeated contact with product is likely.
- Eye protection	Chemical goggles or full face visor.
- Hand protection	Plastic, impervious gloves for protection against unintentional short-term contact. However, since glove performance is governed by many variables, it is strongly recommend that specialist advice on the selection and use of protective gloves is sought.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colourless to yellow liquid
Odour	Mild
pH (concentrated product)	6.4
Melting point (°C)	Approx 0 [32°F]
Boiling point/range (°C)	Approx 100 [212°F]
Flash point (Pensky Martens) (°C)	Not flammable
Explosive properties	None
Oxidising properties	None
Density at 20°C (kg/m ³)	1103
Solubility in water (% by weight)	Completely miscible

Note: These are typical values and do not constitute a specification.

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use.
Conditions to avoid	Protect from freezing.
Materials to avoid	None known.
Hazardous decomposition products	Oxides of carbon and nitrogen evolved in fire.

11. TOXICOLOGICAL INFORMATION

Test data:	No data available on product.
Calculated from ingredient data:	
- Oral LD ₅₀ rat (mg/kg)	> 2000 Not considered hazardous in EU.
Exposure hazard:	
- Inhalation	Prolonged or repeated exposure may cause transient irritation.
- Skin contact	Prolonged or repeated exposure may cause transient irritation.
- Eye contact	Prolonged or repeated exposure may cause transient irritation.
- Ingestion	Likely symptoms are slight gastrointestinal irritation.
Other data	None available.



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12. ECOLOGICAL INFORMATION

Aquatic toxicity: No data available on product.

Calculated data based on ingredients

- Fathead minnow (mg/l)	LC ₅₀ 96 Hr:	3680
	NOEL :	1680
- Daphnia Magna (mg/l)	LC50 48 Hr:	4080
	NOEL :	2100

Persistence and degradability

- COD (mgO ₂ /g)	150 (calculated data)
- BOD 5 (mgO ₂ /g)	0 (calculated data)
- BOD 28 (mgO ₂ /g)	1 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	2 (calculated data)
- TOC (mg C/g)	50 (calculated data)

Bioaccumulative potential

- Bioaccumulation Not bioaccumulating
(Refers to active component Sodium molybdate)

Summary

Environmental effects: Not classified as hazardous to the environment under the EU classification system.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

14. TRANSPORTATION INFORMATION

Not classified as dangerous for transport.

15. REGULATORY INFORMATION

The label shows CAUTION. Keep Out of Reach of Children. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.

Names of the ingredients given on the label: Sodium molybdate and Sodium nitrate.

R phrases: R22, Harmful if swallowed; R36/37/38, Irritating to skin, eyes and respiratory tract.



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S phrases: S2, Keep out of the reach of children; S24/25, Avoid contact with skin and eyes; S26, In case of contact with eyes, rinse immediately with plenty of water and seek medical advice; S28, After contact with skin, wash immediately with plenty of water.

Inventory Status

TSCA

All ingredients of this product are listed unless specifically exempted.

California Proposition 65

Does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

EU

All ingredients of this product are listed in EINECS or ELINCS, unless specifically exempted under EU Directive 67/548/EEC (as amended).

Right to know classification:

None are listed in CA, PA, MN, MA, MI, FL and NJ.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions, which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Hazardous Material Information (HMIS)		National Fire Protection Association (NFPA)	
Health	2	2	Health
Fire	0	0	Fire
Reactivity	1	1	Instability
Personal Protection	G		NA

Health	4 Deadly	3 Extreme Danger	2 Dangerous	1 Slight hazard	0 No hazard
Fire	4 < 73 °F	3 < 100 °F	2 < 200 °F	1 >200 °F	0 Will not burn
Reactivity/Instability	4 - May detonate	3 Explosive	2 Unstable	1 Normally stable	0 Stable

EU labelling information

- Symbol(s) None required

- R-Phrase(s) None assigned

- S-Phrase(s) 2 Keep out of the reach of children
24/25 Avoid contact with skin and eyes



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26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
28	After contact with skin, wash immediately with plenty of water

Version number	2
Date prepared	January 2011
Supersedes Version	1 dated August 2009
Nature of revision	Updated to 2010 ANSI standard.

R-phrases used in Section 3	8	Contact with combustible material may cause fire
	22	Harmful if swallowed
	36/37/38	Irritating to eyes, respiratory system and skin

Based on ANSI Z400.1/Z129.1-2010 and EU Regulation 1907/2006

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