

Safety Data Sheet



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REVISION (see box 16)

Issue : 5

28 : 06 : 2013

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

1.1 Product identifier	Ozone in air	F08, F015, F016, F018
1.2 Relevant identified uses of the substance or mixture and uses advised against	In-situ generation of ozone to neutralise maldours in washrooms and toilets.	
1.3 Details of the supplier of the safety data sheet	Rentokil Initial Supplies, Liverpool, L33 7SR, UK. Product advice line: +44 (0)151 548 5050 Emergency line: +44 (0)1342 833 022 E-mail: sds@rentokil.com	
National contact	Rentokil Initial Supplies, Liverpool, L33 7SR, UK. Product advice line: +44 (0)151 548 5050 Emergency line: +44 (0)1342 833 022 Email: sds@rentokil.com	
1.4 Emergency telephone number	0844 892 011 (for use by medical professionals only).	

SECTION 2 Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008.

Not applicable. See section 16.

Classification according to Directive 1999/45/EC (See section 16)

Not classified.

2.2 Label elements

Risk phrase(s) (R), in full / Hazard statement(s) (H), in full.	Not required.
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Safety phrase(s) (S), in full / Precautionary Statement(s) (P), in full.	Not required.
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2.3 Other hazards

Ozone is a powerful oxidising agent. The half-life of ozone in the gas phase at room temperature is 10 minutes to 2 hours. Ozone is irritating to the mucous membranes of the eyes and respiratory tract. At low concentrations, inhalation of ozone may induce nausea and headaches. Ozone is acutely toxic at high concentrations and can cause pulmonary oedema. Adverse effects on humans are unlikely, provided the product is used as intended. No other significant adverse effects expected under normal conditions of handling and use.

SECTION 3 Composition/Information on Ingredients (See section 16)

OZONE IN AIR

3.2 Mixtures							
% w/w	Common*/ Chemical Name (IUPAC)	CAS No.	EC No.	Index No.	REACH Registration No.	Directive 67/548/EEC classification	Regulation (EC) No 1272/2008 classification
>50.0	Air	-	-	-	-	Not classified.	
0.0002%	Ozone	10028-15-6	233--069-2	-	-	T: R23 Xi: R37	

SECTION 4 First-Aid Measures

4.1 Description of first aid measure

Inhalation	Remove patient to fresh air, keep warm and at rest. Apply supportive measures if necessary and seek medical attention.
Eye Contact	This route of exposure is not anticipated.
Skin Contact	This route of exposure is not anticipated.
Ingestion (Swallowing)	This route of exposure is not anticipated.

4.2 Most important symptoms and effects both acute and delayed (See section 2.3)

Emergency Equipment Suggested	Appropriate first-aid equipment should be provided.
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4.3 Indication of any immediate medical attention and special treatment needed

Note To Doctor	Further information on all Rentokil Initial formulations is lodged with the local National Poisons Information Service.
Antidote	No specific antidote known. Treatment is symptomatic.

SECTION 5 Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media	Choose extinguishing media suitable for the surroundings.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Ozone is a powerful oxidising agent. Ozone at the concentrations generated can support combustion slightly better than air. The half life of ozone in the gas phase at room temperature is 10 minutes to 2 hours.

5.3 Advice for fire fighters

Wear suitable personal protective equipment conforming to EN469.

SECTION 6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable personal protective equipment.

6.2 Environmental precautions

Not applicable. Ozone will decay naturally to oxygen. The half life of ozone in the gas phase at room temperature is 10 minutes to 2 hours.

6.3 Methods and material for containment and cleaning up

Not applicable. Ozone will decay naturally to oxygen. The half life of ozone in the gas phase at room temperature is 10 minutes to 2 hours.

6.4 Reference to other sections

Please also see sections 8 and 13 for further information.

Additional information

None.

SECTION 7 Handling and Storage

7.1 Precautions for safe handling

Use only in accordance with instructions given.

7.2 Conditions for safe storage, including any incompatibilities	Cannot be stored, as it will revert back to oxygen over a short period of time. Keep away from materials that degrade or oxidise in the presence of ozone such as certain textiles, fabrics, organic dyes, rubbers and plants.
7.3 Specific end use(s)	Odour neutraliser

SECTION 8 Exposure Controls/Personal Protection

8.1 Control Parameters

Exposure standard - Directive 98/24/EC (1st IOELV Directive)	Workplace Exposure Limit (WEL) long-term exposure (8 hour Time Weighted Average)	Not applicable.
	Workplace Exposure Limit (WEL) short-term exposure (15 minute reference period)	0.4 mg/m ³
	Substance name used in Directive EC/98/24 (1st IOELV Directive)	Not applicable.

8.2 Exposure Controls

Appropriate engineering controls	None necessary.
Individual Protection Measures	
Eye/face protection	Label advice indicates none necessary under normal handling and use. However, consider other precautionary requirements.
Hand protection	Label advice indicates none necessary under normal handling and use. However, consider other precautionary requirements.
Skin/body protection	Label advice indicates none necessary under normal handling and use. However, consider other precautionary requirements.
Respiratory protection	Label advice indicates none necessary under normal handling and use. However, consider other precautionary requirements.
Environmental Exposure Controls	Use only in accordance with instructions given.

SECTION 9 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance, odour and physical state	A colourless gas with a bleach type odour at concentrations above 0.03 ppm.		
pH	Not applicable.	Solubility in water	Not applicable.
Density	Not applicable.	Solubility in other solvents	Not determined.
Relative density	Not applicable.	Explosive properties	May react very violently with combustible materials and reducing agents, such as organics.
Flash point	Not applicable.	Combustibility	Combustible.
Flammability	Non-flammable.	Oxidising properties	Oxidizing
Initial boiling Point and boiling range	-111.9oC	Evaporation rate	Not determined.
Vapour Density	1.6 (air = 1)	Partition coefficient: n-octanol/water	Not applicable.
Vapour pressure	20 mmHg / -157.2oC	Decomposition temperature	Not determined.
Melting point / Freezing point	Not applicable.	Auto-ignition temperature	Not applicable.

9.2 Other Information

Upper/lower flammability or explosive limits	Not applicable.	Other safety information	None known.
Viscosity	Not applicable.		

SECTION 10 Stability and Reactivity

10.1 Reactivity	Mixtures containing a moderate partial pressure of ozone, and pure ozone even at low pressures are both potentially explosive. May react very violently with combustible materials and reducing agents such as organics.
10.2 Chemical stability	Strong oxidising agent. Ozone is unstable and may decompose spontaneously and violently to oxygen.
10.3 Possibility of hazardous reactions	Ozone is unstable and may decompose spontaneously and violently to oxygen.
10.4 Conditions to avoid	Thermal decomposition occurs at temperatures >200oC, and in a few hours at room temperature.
10.5 Incompatible materials	Avoid contact with certain textiles, organic dyes, rubbers and plants
10.6 Hazardous decomposition products	Ozone is a powerful oxidising agent and during fires, can support combustion in the same way as air. The half-life of ozone in the gas phase at room temperature is 10 minutes to 2 hours.

SECTION 11 Toxicological Information (see also box 2)

11.1 Information on toxicological effects		
Acute Toxicity	Oral	This route of exposure is not anticipated.
	Inhalation	LD50 (rodents) (3-4h) 5-35 mg/L. Death due to lung damage by pulmonary congestion, oedema and haemorrhage. At 0.2ppm ozone is a lung irritant in humans. At 0.5-1.0ppm exposure over several hours leads to lung damage in humans along with poor response to light, nausea and headache. At >9.0 ppm can cause pulmonary oedema in humans.
	Dermal	This route of exposure is not anticipated.
Corrosivity/ Irritation	Skin	This route of exposure is not anticipated.
	Eyes	Ozone may irritate mucous membranes when present at levels >0.1 ppm.
	Respiratory tract	Ozone may irritate mucous membranes when present at levels >0.1 ppm.
Sensitisation	Skin	Unlikely route of exposure.
	Respiratory	Contains no known respiratory sensitisers.
Repeated dose toxicity;	Repeated exposure to ozone has been demonstrated to have an effect upon lung functions in animals at levels of 1-2 ppm.	
Mutagenicity	Product does not contain any components known to have a mutagenic effect.	
Carcinogenicity	Product does not contain any components known to have a carcinogenic effect.	
Reproductive Toxicity	Fertility	Product does not contain any components known to have effects on fertility.
	Developmental	Product does not contain any components known to be toxic to the reproductive system.
Other data	None known.	

SECTION 12 Ecological Information

12.1 Toxicity	
General information	Ozone is unstable and decomposes to oxygen therefore not forming an ecological hazard.
Ecotoxicity data	Ozone is unstable and decomposes to oxygen therefore not forming an ecological hazard.
12.2 Persistence and degradability	Ozone is unstable and decomposes to oxygen therefore not forming an ecological hazard.

12.3 Bioaccumulative potential	Ozone is unstable and decomposes to oxygen therefore not forming an ecological hazard.
12.4 Mobility in soil	Ozone is unstable and decomposes to oxygen therefore not forming an ecological hazard.
12.5 Results of PBT and vPvB assessment	Ozone is unstable and decomposes to oxygen therefore not forming an ecological hazard.
12.6 Other Adverse Effects	Ozone is unstable and decomposes to oxygen therefore not forming an ecological hazard.

SECTION 13 Disposal Considerations

13.1 Waste treatment methods	Not applicable. Ozone is generated in-situ from the ozone generator. Ozone is unstable and decomposes to oxygen, so there is no waste material.	
Product/packaging disposal	Not applicable. Ozone is generated in-situ from the ozone generator. Ozone is unstable and decomposes to oxygen, so there is no waste material.	
Classification (Council Directive 91/689/EC, Commission Decision 2000/532/EC (amended) Commission Decision 2001/118/EC))	Hazard Code: Not classified.	
	Substances making the waste hazardous:	Concentrations (%):
	Not applicable.	
Note for Disposal	Disposal must be in accordance with Local, State or National Requirements.	

SECTION 14 Transport Information (International unless otherwise indicated)

ADR 2011 (International Road) / IMDG 2010 (Sea)

14.1 UN number	-	RIS Code	- F08, F015, F016, F018
14.2 UN Proper Shipping Name	Not applicable.		
14.3 Transport hazard class(es)	Not applicable.		
ADR HIN	Not applicable.		
UK Hazchem EAC	Not applicable.		
IMDG EMS	Not applicable.		
14.4 Packing Group	Not applicable.		Labels Not applicable.
Transport Category	Not applicable.		
14.5 Environmental hazards	Not applicable.		
Marine pollutant	Not applicable.		
Additional precautions	Not applicable.		
14.6 Special precautions for user	Not applicable.		
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.		
Limited Quantity Exemptions	Not applicable.		
Note for Transport	Local, State or National requirements may apply to the carriage of this product.		

SECTION 15 Regulatory Information

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

Authorisations and/or restrictions on use	Information to be made available according to ECHA review programme.
Other EU regulations	This safety data sheet was prepared in accordance with EC Directive 1907/2006 (as amended). Labelling is in accordance with EC Directive 1999/45. Additional labelling requirements may be necessary in accordance with other National legislation. The registration of this product may be necessary before use and any additional local requirements must be observed at all times. Other National measures or guidance should be followed where appropriate.
15.2 Chemical safety assessment	Information to be made available according to ECHA review programme.

SECTION 16 Other Information

Revisions	Changes have been made to the content of boxes 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, compared with issue 4.
Abbreviations and acronyms	<p>Typical standard abbreviations and acronyms used in Rentokil Initial Safety Data Sheets are as follows:</p> <p>ADR 2011 - International Carriage of Dangerous Goods by Road (ADR) ADR HIN - ADR Hazard Identification Number (HIN) Annex I DNEL or PNEC - Derived No Effect Level / Predicted No Effect Concentration CAS No - Chemicals Abstract Service Registry Number COSHH assessments - Control of Substances Hazardous to Health ECHA - European Chemicals Agency EC No - European Commission number EN469 - European standard for Personal Protective Equipment used for fire fighting EN standards for PPE - European Standards for Personal Protective Equipment EWC - European Waste Catalogue Code IMDG 2010 - International Maritime Dangerous Goods (IMDG) Code IUPAC - International Union of Pure and Applied Chemistry LD₅₀ - Median lethal dose LC₅₀ - Lethal concentration REACH - Registration, Evaluation, Authorisation and restriction of Chemicals RIS Code - Internal manufacturing code number WEL - Workplace Exposure Limit UK Hazchem EAC - UK Hazchem Emergency Action Code</p> <p>Typical Directives and Regulations referred to Rentokil Initial Safety Data Sheets are as follows:</p> <p>Commission Decision 95/320/EC - Scientific Committee for Occupational Exposure Limits to Chemical Agents Commission Decision 2000/532/EC - List of wastes Commission Decision 2001/118/EC - Amendment to 2000/532/EC with regards to List of wastes Directive 67/548/EEC - Dangerous Substances Directive Directive 76/768/EC (as amended) - The Cosmetics Directive Directive 89/686/EEC - The Personal Protective Equipment (PPE) Directive Directive 91/689/EC - Directive on Hazardous waste Directive 98/24/EC (1st IOELV Directive) - Chemical Agents Directive 98/24/EC Protection of the Health and Safety of Workers from the Risks from Chemical Agents IOELV Directive: Indicative Occupational Exposure Limit Values Regulation (EC) No 1907/2006 - REACH (Registration, Evaluation, Authorisation and restriction of Chemicals) Regulation (EC) No 453/2010-amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Directive 1999/45/EC - Dangerous Preparations Directive Directive 2004/37/EC - Carcinogens and Mutagens Directive Regulation (EC) No. 648/2004 - Detergents Regulation Regulation (EC) No 1272/2008 - Classification, Labelling and Packaging</p>

Key literature references and sources for data	For details of the data and information sources used, please contact Rentokil Initial using the details in Section 1.
Classification and used classification procedure for mixtures labelled to Directive 1999/45/EC according to Regulation (EC) No 1272/2008	Not currently classified to Regulation (EC) No. 1272/2008 until 31/05/2015.
Risk phrase/Hazard statement text (From section 3 - These refer to the ingredients only. See section 2 for the product risk phrases)	R23: Toxic by inhalation. R37: Irritating to respiratory system. Hazard phrases are a requirement of Regulation (EC) No 1272/2008, and will be listed when available.
Training advice	Always read the label and product information before use. Ensure you have received adequate training and or instructions before use.
Further Information	-

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Before using any product, ensure that you read and understand its label.

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