



SAFETY DATA SHEET

Version 1.0
Revision Date 04.04.2018

SDS Number 300000078404
Print Date 25.04.2018

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

1.1. Product identifier : Sureshield 22

Refer to Section 3 for REACH information

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

Use of the Substance/Mixture : General Industrial.

Restrictions on Use : No data available.

1.3. Details of the supplier of the safety data sheet : Dixons of Westerhope Limited
Newbiggin Lane
Westerhope
Tyne & Wear
NE5 1LX

Email Address – Technical Information : orders@dixonsofwestershope.co.uk

Telephone : +44 (0)191 271 4888

1.4. Emergency telephone number : +44 (0)191 271 4888
Only available on weekdays, during the hours of 08:00 to 17:00.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Gases under pressure - Compressed gas. H280:Contains gas under pressure; may explode if heated.

2.2. Label elements

Hazard pictograms/symbols



Signal Word: Warning

Hazard Statements:

H280:Contains gas under pressure; may explode if heated.

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Precautionary Statements:

Storage : P403:Store in a well-ventilated place.

2.3. Other hazards

May increase respiration and heartrate.

SECTION 3: Composition/information on ingredients

3.1. Substances : Not applicable.

3.2. Mixtures

Components	EINECS / ELINCS Number	CAS Number	Concentration (Volume)
Oxygen	231-956-9	7782-44-7	2 %
Carbon dioxide	204-696-9	124-38-9	22 %
Argon	231-147-0	7440-37-1	76 %

Components	Classification (CLP)	REACH Reg. #
Oxygen	Ox. Gas 1 ;H270 Press. Gas (Comp.) ;H280	*1
Carbon dioxide	Press. Gas (Comp.) ;H280	*1
Argon	Press. Gas (Comp.) ;H280	*1

*1:Listed in Annex IV / V REACH, exempted from registration.

*2:Registration not required: Substance manufactured or imported < 1 t/y.

*3:Registration deadline not expired.

Refer to section 16 for full text of each relevant hazard statement (H).

Concentration is nominal. For the exact product composition, please refer to technical specifications.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

Ingestion : Prevent aspiration of vomit. Turn victim's head to the side.

Inhalation : Move to fresh air.

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

Symptoms : Shivering fit. Sweating. Blurred vision. Headache. Increased pulse rate. Shortness of breath. Rapid respiration.

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

No data available.

SECTION 5: Firefighting measures

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5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO₂).
Dry chemical.
Dry sand.
Limestone powder.

Extinguishing media which must not be used for safety reasons. : No data available.

Special hazards arising from the substance or mixture : No data available.

5.3. Advice for firefighters : Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures : Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level. Monitor carbon dioxide level. Evacuate personnel to safe areas.

6.2. Environmental precautions : Construct a dike to prevent spreading.

6.3. Methods and material for containment and cleaning up : Place in appropriate chemical waste container.

Additional advice : If possible, stop flow of product.

6.4. Reference to other sections : For more information refer to Sections 8 & 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Use personal protective equipment. When using, do not eat, drink or smoke.

7.3. Specific end use(s)

Refer to section 1 or the extended SDS if applicable.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit(s)

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Carbon dioxide	Time Weighted Average (TWA): EH40 WEL	5,000 ppm	9,150 mg/m ³
Carbon dioxide	Short Term Exposure Limit (STEL): EH40 WEL	15,000 ppm	27,400 mg/m ³
Carbon dioxide	Time Weighted Average (TWA): EU ELV	5,000 ppm	9,000 mg/m ³

If applicable, refer to the extended section of the SDS for further information on CSA.

8.2. Exposure controls

Engineering measures

- Provide natural or mechanical ventilation to prevent accumulation above exposure limits.
- Provide readily accessible eye wash stations and safety showers.
- Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

- Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Special instructions for protection and hygiene : Provide readily accessible eye wash stations and safety showers.
- Environmental Exposure Controls : If applicable, refer to the extended section of the SDS for further information on CSA.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- (a/b) Physical state/Colour : Compressed gas. Colorless gas
- (c) Odour : Not determined.
- (c) Odour : Mixture contains one or more component(s) which have the following odor: No odor warning properties.
- (e) Relative Density : 1.4049 (air = 1) Heavier than air.
- (f) Melting point / freezing point : No data available.
- (h) Vapor pressure : No data available.
- (i) Water solubility : No data available.
- (j) Partition coefficient: n-octanol/water [log Kow] : Not known.
- (k) pH : Not applicable for gases and gas mixtures.
- (l) Viscosity : No reliable data available.
- (m) Particle characteristics : Not applicable for gases and gas mixtures.
- (n) Upper and lower explosion / flammability limits : No data available.
- (o) Flash point : Not applicable for gases and gas mixtures.

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(p) Autoignition temperature : Not known.

(q) Decomposition temperature : Not applicable.

9.2. Other information

Explosive properties : Not applicable.

Oxidizing properties : No data available.

Molecular Weight : 40.68 g/mol

Odor threshold : Odour threshold is subjective and inadequate to warn of overexposure.

Evaporation rate : Not applicable for gases and gas mixtures.

Flammability (solid, gas) : Refer to product classification in Section 2

Relative vapor density : No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity : No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability : Stable under normal conditions.

10.3. Possibility of hazardous reactions : No data available.

10.4. Conditions to avoid : No data available.

10.5. Incompatible materials : No data available.

10.6. Hazardous decomposition products : No data available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure

Effects on Eye : No data available.

Effects on Skin : No data available.

Inhalation Effects : Concentrations of 10% CO₂ or more can produce unconsciousness or death. Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. Carbon Dioxide is physiologically active, affecting circulation and breathing. At concentrations between 2 and 10%, carbon dioxide can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate.

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Ingestion Effects : No data available.
Symptoms : Shivering fit. Sweating. Blurred vision. Headache. Increased pulse rate. Shortness of breath. Rapid respiration.

Acute toxicity

Acute Oral Toxicity : No data is available on the product itself.
Acute Inhalation Toxicity : Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO₂ has been found to act synergistically to increase the toxicity of certain other gases (CO, NO₂). CO₂ has been shown to enhance the production of carboxy- or met-hemoglobin by these gases possibly due to carbon dioxide's stimulatory effects on the respiratory and circulatory systems.
Acute Dermal Toxicity : No data is available on the product itself.
Skin corrosion/irritation : No data available.
Serious eye damage/eye irritation : No data available.
Sensitization. : No data available.

Chronic toxicity or effects from long term exposures

Carcinogenicity : No data available.
Reproductive toxicity : No data is available on the product itself.
Germ cell mutagenicity : No data is available on the product itself.
Specific target organ systemic toxicity (single exposure) : No data available.
Specific target organ systemic toxicity (repeated exposure) : No data available.
Aspiration hazard : No data available.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity : No data is available on the product itself.
Toxicity to fish - Components
Carbon dioxide LC50 (1 h) : 240 mg/l Species : Rainbow trout (Oncorhynchus mykiss).
Carbon dioxide LC50 (96 h) : 35 mg/l Species : Rainbow trout (Oncorhynchus mykiss).

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Toxicity to other organisms : No data is available on the product itself.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data is available on the product itself.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

If applicable, refer to the extended section of the SDS for further information on CSA.

12.6. Other adverse effects

When discharged in large quantities may contribute to the greenhouse effect.

Effect on the ozone layer

Ozone Depleting Potential : No data available.

Global Warming Potential : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods : Contact supplier if guidance is required.

Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

SECTION 14: Transport information

ADR

UN/ID No. : UN1956
Proper shipping name : COMPRESSED GAS, N.O.S., (Argon, Carbon dioxide)
Class or Division : 2
Tunnel Code : (E)
Label(s) : 2.2
ADR/RID Hazard ID no. : 20
Marine Pollutant : No

IATA

UN/ID No. : UN1956
Proper shipping name : Compressed gas, n.o.s., (Argon, Carbon dioxide)

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Class or Division : 2.2
Label(s) : 2.2
Marine Pollutant : No

IMDG

UN/ID No. : UN1956
Proper shipping name : COMPRESSED GAS, N.O.S., (Argon, Carbon dioxide)
Class or Division : 2.2
Label(s) : 2.2
Marine Pollutant : No
Segregation Group: : None

RID

UN/ID No. : UN1956
Proper shipping name : COMPRESSED GAS, N.O.S., (Argon, Carbon dioxide)
Class or Division : 2
Label(s) : 2.2
Marine Pollutant : No

Transport in bulk according to Annex II of Marpol and the IBC Code
For complete transportation information, contact customer service.

Further Information

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact customer service.

SECTION 15: Regulatory information

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

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on Inventory.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

Other Regulations

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

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Regulation (EC) No 1272/2008 the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Control of Substances Hazardous to Health Regulations 2002 (as amended)

Health and Safety at Work etc. Act 1974

Management of Health and Safety at Work Regulations (Northern Ireland) 2000 c.388, and as amended

The Health and Safety at Work etc. Act 1974 (Application to Environmentally Hazardous Substances) Regulations 2002 (England and Wales and Scotland) 11 March 2002 c.282, and as amended

Health and Safety at Work Order (Application to Environmentally Hazardous Substances) Regulations (Northern Ireland) 2003 (Northern Ireland) 14 March 2003 c52, and as amended

The Control of Major Accident Hazards Regulations 2015 c483

The Control of Major Accident Hazards Regulations (Northern Ireland) 2015 c325

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2011 c1885, and as amended

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations with amendments (Northern Ireland) 2011 c365

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 c.407

The Water Environment Regulations (Northern Ireland) 2017 c.81

Pollution Prevention and Control Act 1999 c.24

The Fluorinated Greenhouse Gases Regulations 2015 c.310

The Fluorinated Greenhouse Gases Regulations (Northern Ireland) 2015 c.425

The Acetylene Safety (England and Wales and Scotland) Regulations 2014 c.1639

The Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 c.917

The Highly Flammable Liquids and Liquefied Petroleum Gases Regulations (Northern Ireland) 1975 c.256

Dangerous Substances and Explosive Atmospheres Regulations (Northern Ireland) 2003 c.152

The Dangerous Substances and Explosive Atmospheres Regulations 2002 c.2776

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Pollution Prevention and Control Act 1999

The Environmental Permitting (England and Wales) Regulations 2016

Ozone Depleting Substances Regulations 2015

15.2. Chemical safety assessment

A CSA does not need to be carried out for this product.

SECTION 16: Other information

Ensure all national/local regulations are observed.

Hazard Statements:

H270 May cause or intensify fire; oxidiser.

H280 Contains gas under pressure; may explode if heated.

Indication of Method:

Gases under pressure Compressed gas. Contains gas under pressure; may explode if heated. On basis of test data.

Abbreviations and acronyms:

ATE - Acute Toxicity Estimate

CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

EINECS - European Inventory of Existing Commercial Chemical Substances

ELINCS - European List of Notified Chemical Substances

CAS# - Chemical Abstract Service number

PPE - Personal Protection Equipment

Kow - octanol-water partition coefficient

DNEL - Derived No Effect Level

LC50 - Lethal Concentration to 50 % of a test population

LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)

NOEC - No Observed Effect Concentration

PNEC - Predicted No Effect Concentration

RMM - Risk Management Measure

OEL - Occupational Exposure Limit

PBT - Persistent, Bioaccumulative and Toxic

vPvB - Very Persistent and Very Bioaccumulative

STOT - Specific Target Organ Toxicity

CSA - Chemical Safety Assessment

EN - European Standard

UN - United Nations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road

IATA - International Air Transport Association

IMDG - International Maritime Dangerous Goods

RID - Regulations concerning the International Carriage of Dangerous Goods by Rail

WGK - Water Hazard Class

Key literature references and sources for data:

ECHA - Guidance on the compilation of safety data sheets

ECHA - Guidance on the application of the CLP Criteria

ARIEL database

Prepared by : Air Products and Chemicals, Inc. Global EH&S Department

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For additional information, please visit our Product Stewardship web site at
<http://www.airproducts.com/productstewardship/>

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws. COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.
