1. Product Identification

- Product Description: Gas Springs
- Primary use: Motion Control/ Assist
- Manufacturer:

Industrial Gas Springs (IGS) Ltd
20-26 Wates Way
Mitcham, Surrey
CR4 4HR United Kingdom
Tel: +44 (0)20 8646 6595
www.industrialgassprings.com

Industrial Gas Springs (IGS) Inc.
162 Pinnacle Dr.
Romeoville, IL 60446
United States
Tel: +1 800 214 7034
www.industrialgassprings.com

2. Hazard Identification

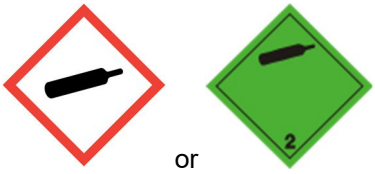
This product is considered to be an article as defined in Regulation (EC) 1272/2008 (CLP Regulation).

Hazard classifications (contained within product):

Nitrogen: Compressed gas

Signal word: Warning

Pictograms



or

Hazard statements: “HIGH PRESSURE DO NOT OPEN”

Oils: Mineral oil and Silicone oil

Classification: Not classified as dangerous under EC criteria. No applicable signal words, pictogram, or hazard statement.

Health Hazards: Not expected to be a health hazard when used under normal conditions. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. Used oil may contain harmful impurities.

Signs and Symptoms: Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

Safety Hazards: Not classified as flammable but will burn.

Environmental Hazards: Not classified as dangerous for the environment

Elastomers: Nitrile Butane Rubber, Polyurethane, Fluoro-carbon rubber, Ethylene Propylene Rubber

Classification: Not classified as dangerous under EC criteria.

3. Composition/ Information on Ingredients

Chemical Name	Common names/ acronyms	CAS Number
Highly refined mineral oil	Hydraulic oil	8020-83-5
Dimethyl polysiloxane	Silicone oil	63148-62-9
Nitrogen	N2, compressed gas	7727-37-9
Polyurethane	PU seals	N/A (ECHA List No: 618-449-1)
Ethylene Propylene Rubber	EPDM seals	25038-36-2
Fluoro-Carbon Rubber	FKM, Vitron seals	9011-17-0
Nitrile rubber	NBR seals	9005-98-5
Tribo-polymers	Iglidur	N/A

4. First-Aid Measures

Product is considered inert while in normal use.

In case of accidental release of product contents see as follows:

4.1 Oil
Inhalation: avoid misting; remove to fresh air if inhalation of mist occurs. Medical advice should be sought if symptoms from inhalation persist.
Ingestion: do not induce vomiting; wash mouth out with water and seek medical advice
Skin and eye contact: may cause irritation, wash skin with cold water and soap, eyes to be flushed thoroughly with water. Contaminated clothing should not be allowed to maintain contact with skin.

4.2 Gas
Inhalation: in high concentration, may cause asphyxiation. Remove to fresh air if inhalation of occurs. Medical advice should be sought if symptoms from inhalation persist.

4.3 Elastomers
No effects requiring first aid are expected during normal use. In case of any exposure to thermally degraded product, seek immediate medical advice, indicating that hydrogen cyanide and/or hydrogen fluoride is a decomposition product.

5. Fire Fighting Measures

Intact product will not self-ignite.

All extinguishing media allowed on integral spring.

Exposure to fire may cause rupture of container and rapid release of contents, which may include some oil. Oil may combust if exposed to fire (flashpoint >150°C). In case of fire, use Foam, CO2, dry powder only (not water). Self-contained respirator and protective clothing should be worn.

6. Accidental Release Measures

In case of accidental release of product contents, see section 2 and 4 as necessary

Avoid any spillage of oil entering drains, sewers or surface waters. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal by a licensed waste contractor.

7. Handling and Storage

Store in a cool, dry, and ventilated area, preferably with the direction of the rod down.

Precautions should be taken to prevent damage to the rod and body.

Keep product away from direct heat or fire.

Body must not be pierced.

Suitable care taken with heavy loads and high forces.

Do not eat, drink or smoke in the work area.

To avoid contamination of food or drink wash hands after use and remove any contaminated clothing before entering eating/rest areas.

8. Exposure Controls/ Personal Protection

There is no known effect from exposure to the gas spring. No controls/ personal protection equipment required when storing or using the product.

Personal Protective Equipment for accidental release of oil:

Eyes: Use proper protection - safety glasses as a minimum.

Skin: Washing at mealtime and end of shift is adequate.

Inhalation/Suitable Respirator: No specific recommendations.

9. Physical and Chemical Properties

The following two tables list the properties for the classified internal chemicals.

	Property:	SAE30 Mineral Oil	CL5 Mineral Oil	HLP/ CL10 Mineral Oil	HLP/ CL32 Mineral Oil
a	Appearance (physical state, colour etc.	Amber	Amber	Amber	Amber
b	Odour;	mild oil odour	mild oil odour	mild oil odour	mild oil odour
c	Odour threshold;	*	*	*	*
d	pH;	*	*	*	*
e	Melting point/freezing point;	*	*	*	*
f	Initial boiling point and boiling range;	*	*	*	>320°C
g	Flash point;	>200°C	130°C	142°C	>200°C
h	Evaporation rate;	*	*	*	*
i	Flammability (solid, gas)	*	*	*	*
j	Upper/lower flammability or explosive limits;	*	*	*	*
k	Vapour pressure;	*	*	*	*
l	Vapour density;	*	*	*	*
m	Relative density;	0.873	0.837	0.850	0.870
n	Solubility (in water)	insoluble	insoluble	insoluble	insoluble
o	Partition coefficient: n-octanol/water;	*	*	*	*
p	Auto-ignition temperature;	does not	does not	does not	does not
q	Decomposition temperature;	*	*	*	*
r	Viscosity.	98 (40°C)	4.9 (40°C)	10 (40°C)	32 (40°C)

* = not applicable or not determined

9. Physical and Chemical Properties continued

	Property:	Silicon Oil	DTE FM220 (Food Oil)	Rubber (NBR)	Fluoro-carbon rubber (FKM/VITON)
a	Appearance (physical state, colour etc.	colourless	Pale Amber	black rubber	Black/Yellow
b	Odour;	odourless	mild oil odour	mild odour	odourless
c	Odour threshold;	N/A	*	*	*
d	pH;	*	*	*	*
e	Melting point/freezing point;	*	*	*	*
f	Initial boiling point and boiling range;	>65°C	*	*	*
g	Flash point;	250°C	226°C	200°C	>204°C
h	Evaporation rate;	*	*	*	*
i	Flammability (solid, gas)	*	*	*	*
j	Upper/lower flammability or explosive limits;	*	*	*	*
k	Vapour pressure;	*	*	*	*
l	Vapour density;	*	*	*	*
m	Relative density;	0.97	0.854	1.00-1.65	1.82
n	Solubility (in water)	insoluble	negligible	insoluble	insoluble
o	Partition coefficient: n-octanol/water;	*	*	*	*
p	Auto-ignition temperature;	*	does not	200°C	>500°C
q	Decomposition temperature;	*	*	*	*
r	Viscosity.	150-250 (25°C)	204 (40°C)	*	*

* = not applicable or not determined

9. Physical and Chemical Properties continued

	Property:	Polyurethane (PU)	Ethylene-Proplene (EPDM)	Thermoplastic Polymer	Nitrogen
a	Appearance (physical state, colour etc.	colourless	Pale Amber	Yellow	Clear
b	Odour;	odourless	odourless	odourless	odourless
c	Odour threshold;	*	*	*	*
d	pH;	*	*	*	*
e	Melting point/freezing point;	*	*	*	<-210°C
f	Initial boiling point and boiling range;	*	*	*	<-195°C
g	Flash point;	*	> 200°C	*	*
h	Evaporation rate;	*	*	*	*
i	Flammability (solid, gas)	*	*	Solid is flammable Do not apply direct flame. Avoid temperatures above 140°C	*
j	Upper/lower flammability or explosive limits;	*	*	*	*
k	Vapour pressure;	*	*	*	*
l	Vapour density;	*	*	*	*
m	Relative density;	0.97	1.09	1.49	0.97
n	Solubility (in water)	insoluble	insoluble	insoluble	20 mg/ L
o	Partition coefficient: n-octanol/water;	*	*	*	*
p	Auto-ignition temperature;	does not	does not	Does not	does not
q	Decomposition temperature;	*	>200°C	220°C	*
r	Viscosity.	*	*	*	*

* = not applicable or not determined

10. Stability and Reactivity

Stable at room temperature.

Elastomers may degrade if exposed to high temperature/ fire.

Avoid exposure to oxidising agents.

11. Toxicological Information

Intact product has no known toxicology issues beyond those of ingredients contained (see section 2)

Information for oils contained:

Basis for Assessment : Information given is based on data on the components and the toxicology of similar products.

Acute Oral Toxicity : Expected to be of low toxicity: LD50 > 5000 mg/kg

Acute Dermal Toxicity : Expected to be of low toxicity: LD50 > 5000 mg/kg

Acute Inhalation Toxicity : Not considered to be an inhalation hazard under normal conditions of use.

Skin Irritation : Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Eye Irritation : Expected to be slightly irritating.

Respiratory Irritation : Inhalation of vapours or mists may cause irritation.

Sensitisation : Not expected to be a skin sensitiser.

Repeated Dose Toxicity : Not expected to be a hazard.

Other Information: Silicone oil can generate formaldehyde at approximately 300°F(150°C) and above. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant and potential cancer hazard.

Elastomers can decompose at high temperatures (>200°C) producing hydrogen cyanide and/or hydrogen fluoride. These may irritate eyes, nose and throat.

Ensure adequate ventilation or wear protective equipment such as positive pressure air supplied respirator, gloves, goggles and protective clothing if this product is heated above 300°F(150°).

12. Ecological Information

No short term hazards.

Long term exposure to corrosive environment may result in leakage/ spillage of contained ingredients including mineral or silicone oil.

13. Disposal Considerations

Recyclable, in accordance with local regulations.

Waste oil must be disposed of in accordance with local regulations.

Do not incinerate.

14. Transport Information

Air Carriage - IATA/ ICAO

A48 Packaging tests are not considered necessary

Proper Shipping Name	Class	UN ID No.	Packing Instruction
ARTICLES, PRESSURIZED PNEUMATIC Containing non-flammable gas	2.2	UN 3164	208

Sea Carriage - IMDG

Marine pollutant; Exact technical name	EMS	Class	UN ID No.	Packing Group
ARTICLES, PRESSURIZED PNEUMATIC or HYDRAULIC Containing non-flammable gas	MFAG	2.2	UN 3164	2106

Road Carriage – ADR/ RID

Exempted from ADR regulations as per special provision 594

UN No. 3164 Designation	WARNING SIGN	Class	Number/ Letter	Substance No.
ARTICLES, PRESSURIZED PNEUMATIC or HYDRAULIC that are overdimensioned	DANGER No	2	6 A	3164

Mail Service – International air mail not permitted

Excluded from 2010/35/EU Transport Pressure Equipment Directive (TPED).

15. Regulatory Information

Products comply with simple pressure vessel directive (SPVD 2014/29/EU) and where applicable the Pressure Equipment Directive (PED 2014/68/EU).

Product labelling includes “HIGH PRESSURE DO NOT OPEN”

16. Other Information

VERSION	Date of Change	Section	Description of changes
Version 1.0	*1/7/2015*		*First edition created to the recommendations as part of latest release of OSHA HazCom Standard 29 CFR 1910, GHS and EC 1907/2006*
Version 2.0	*22/01/2020*	*all*	*Whole document reviewed/revised for compliance to current recommendations and amended where necessary. Revised to include additional oils and elastomers.*

JP Duvillard
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