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# MATERIAL SAFETY DATA SHEET

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product name:**

Gas Springs

**Manufacturer:**

Metrol Gas Springs

**Address:**

Metrol Springs Limited, 5 Clayfield Close, Moulton Park Industrial Estate, Northampton, NN3 6QF, UK

**Telephone No:**

+44 (0) 1604 499 332

**Fax No:**

+44 (0) 1604 493 390



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## SECTION 2: INFORMATION ON INGREDIENTS

### Description:

Gas spring is a closed system with an innerly defined pressure of nitrogen. It consists of a piston, piston rod, cylinder, guiding piece, seals, end fittings and small amount oil for lubrication and end damping.

### Gas:

Chemical Name	CAS-NO	Volume	Chemical Formula
Nitrogen	07727-37-9	>99%	N <sub>2</sub>

### Oil:

Three types of oil are used in Metrol Gas Springs, for lubrication and damping.

Highly refined mineral oils and additives. The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.



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## SECTION 3: HAZARDS IDENTIFICATION

### GAS:

#### Appearance:

Colourless

#### Physical State:

Compressed Gas

#### Odour:

Odourless

### Principle Routes of Exposure:

#### Inhalation:

Simple asphyxiant. May cause suffocation by displacing the oxygen in the air.

Exposure to oxygen deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death.

Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves.

Lack of sufficient oxygen may cause serious injury or death.



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## Eyes and Skin:

This product is a gas at room temperature. Contact with liquid may cause frostbite.

## Skin Absorption Hazard:

No known hazard in contact with skin.

## Ingestion:

Not an expected route of exposure.

## Chronic Effects:

None known.

## Aggravated Medical:

None known.

## Environmental Hazard:

See section 12 for additional information.



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## OIL:

### Human Health Hazards:

No specific hazards under normal use conditions. Prolonged or repeated exposure may give rise to dermatitis.

Used oil may contain harmful impurities.

### Safety Hazards:

Not classified as flammable, but will burn.

### Environmental Hazards:

Not classified as dangerous for the environment.



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## SECTION 4: FIRST AID AND MEASURES

### GAS:

#### Eye Contact:

None required for gas.

If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

#### Skin Contact:

None required for gas.

For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with luke warm water.

DO NOT USE HOT WATER.

A physician should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.

#### Inhalation:

Prompt Medical attention is mandatory in all cases of inhalation overexposure.

Rescue personnel should be equipped with self-contained breathing apparatus.

Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air.

If breathing is difficult, administer oxygen.

Unconscious persons should be moved to an uncontaminated area and, as necessary, given artificial resuscitation and supplemental oxygen.

Treatment should be symptomatic and supportive.

#### Ingestion:

None under normal use. Get medical attention if symptoms occur.



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## Notes to Physician:

Treat symptomatically.

## OIL:

Not expected to give rise to an acute hazard under normal conditions of use.

## Inhalation:

In the unlikely event of dizziness or nausea, remove casualty to fresh air. If symptoms persist, obtain medical attention.

## Skin:

Remove contaminated clothing and wash affected skin with soap and water.

If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur.

If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.

Obtain medical attention even in the absence of apparent wounds.

## Eye:

Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

## Ingestion:

Wash out mouth with water and obtain medical attention. Do not induce vomiting.

## Advice to Doctor:

Treat symptomatically.

Aspiration into the lungs may result in chemical pneumonitis.

Dermatitis may result from prolonged or repeated exposure.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function.



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## SECTION 5: FIRE FIGHTING MEASURES

### GAS:

#### Flammable Properties:

Not flammable.

#### Suitable Extinguishing Media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Sensitivity to Mechanical Impact:

None.

#### Sensitivity to Static Discharge:

None.

#### Specific Hazards Arising from the Chemical:

Cylinders may rupture under extreme heat.

Continue to cool fire exposed cylinders until flames are extinguished.

Damaged cylinders should be handled only by specialists.

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.



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## OIL:

### Specific Hazards:

Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.

### Extinguishing Media:

Foam and dry chemical powder. Carbon dioxide, sand or earth may be used for small fires only.

### Unsuitable Extinguishing Media:

Water in jet. Use of halon extinguishers should be avoided for environmental reasons.

### Protective Equipment:

Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.



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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### GAS:

#### Personal Precautions:

Ensure adequate ventilation.

Evacuate personnel to safe areas.

Use personal protective equipment.

Monitor oxygen level.

#### Environmental Precautions:

Prevent spreading of vapors through sewers, ventilation systems and confined areas.

#### Methods for Containment:

Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk.

If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest supplier location.

#### Methods for Cleaning Up:

Return cylinder to Metrol Springs Ltd or an authorized distributor.



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## OIL:

### Personal Precautions:

Avoid contact with skin and eyes. Wear PVC, Neoprene or nitrile rubber gloves.

Wear rubber knee length safety boots and PVC Jacket and Trousers.

Wear safety glasses or full face shield if splashes are likely to occur.

### Environmental Precautions:

Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Inform local authorities if this cannot be prevented.

### Clean-up Methods - Small Spillages:

Absorb liquid with sand or earth.

Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.

### Clean-up Methods - Large Spillages:

Prevent from spreading by making a barrier with sand, earth or other containment material.

Reclaim liquid directly or in an absorbent.

Dispose of as for small spills.



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## SECTION 7: HANDLING AND STORAGE

### GAS AND OIL:

Do not dent, pierce or heat the spring which contains a pressurised gas.

Gas Springs must be stored ROD DOWNWARDS in a cool dry, ventilated area.

Avoid direct sunlight, heat sources, and strong oxidizing agents.

Store away from food stuffs.

## SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

### GAS:

#### Exposure Guidelines:

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

#### Ventilation:

Ensure adequate ventilation, especially in confined areas.

#### Eye/Face Protection:

If splashes are likely to occur, wear: Goggles. Face-shield.

#### Skin and Body Protection:

Wear cold insulating gloves when handling liquid. Work gloves and safety shoes are recommended when handling cylinders.

#### General Use:

No special protective equipment required.

#### Hygiene Measures:

Wear suitable gloves and eye/face protection.



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## OIL:

### Exposure Limits:

Substance	Regulations	Exposure Duration	Exposure Limits	Units
Oil mist, mineral	ACGIH	TWA	5	mg/m <sup>3</sup>
	ACGIH	STEL	10	mg/m <sup>3</sup>

### Exposure Controls:

Use local exhaust ventilation if there is a risk of inhalation of vapours, mists or aerosols.

### Respiratory Protection:

Not normally required.

If oil mist cannot be controlled, a respirator fitted with an organic vapour cartridge combined with a particulate pre-filter should be used.

### Hand Protection:

PVC or nitrile rubber gloves.

### Eye Protection:

Wear safety glasses or full face shield if splashes are likely to occur.

### Body Protection:

Minimise all forms of skin contact.

Overalls and shoes with oil resistant soles should be worn.

Launder overalls and undergarments regularly.



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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

The information below is for the oil and the gas in the gas springs.

GENERAL INFORMATION	OIL	GAS
Colour	Red	Colorless.
Physical State:	Liquid at ambient temperature.	Compressed gas
Odour	Characteristic mineral oil.	Odorless
pH Value	Data not available.	Data not available.
Vapour Pressure	Expected to be less than 0.5 Pa at 20°C.	No data available.
Initial Boiling Point	Expected to be above 280°C.	/Range -195.8°C / -320.4°F
Solubility in Water	Negligible.	Very slight
Density	circa 871 kg/m <sup>3</sup> at 15°C.	0.072 lb/ft <sup>3</sup> (1.153 kg/m <sup>3</sup> ) (@ 21.1°C)
Flash Point	circa 180°C (COC).	Data not available.
Flammable Limits -	Upper 10% V/V (typical) (based on mineral oil).	Not applicable
Flammable Limits -	Lower 1% V/V (typical) (based on mineral oil).	Not applicable
Auto-Ignition Temperature	Expected to be above 320°C.	Data not available.
Kinematic Viscosity	circa 34,9 mm <sup>2</sup> /s at 40°C.	Not applicable
Evaporation Rate	Data not available.	Data not available.
Vapour Density	(Air=1) Greater than 1.	0.97 (air = 1)
Partition co-efficient,	n-octanol/water Log Pow expected to be greater than 6.	Data not available.
Pour Point	circa -45°C.	Data not available.

## SECTION 10: STABILITY AND REACTIVITY

GENERAL INFORMATION	OIL	GAS
Stability	Stable.	Stable.
Incompatible Products	Strong oxidizing agents.	None known.
Conditions to Avoid	Extremes of temperature and direct sunlight.	None known.
Hazardous Decomposition Products	Not expected to form during normal storage.	None known
Hazardous Polymerization	None known	Hazardous polymerization does not occur

## SECTION 10: STABILITY AND REACTIVITY

GENERAL INFORMATION	OIL	GAS
Acute Toxicity		
LD50 Oral:	LD50 expected to be > 2000 mg/kg.	No information available.
LD50 Dermal	LD50 expected to be > 2000 mg/kg.	No information available.
LC50 Inhalation	No inhalation hazard under normal conditions of use.	No information available.
Inhalation	Slight irritation of the respiratory tract may occur.	Product is a simple asphyxiant.
Repeated Dose Toxicity	No information available.	No information available.
Carcinogenicity	Not known to be associated with carcinogenic effects.	No ingredient listed as a carcinogen.
Irritation	Expected to be slightly irritating for eye and skin.	No information available.
Sensitization	Not expected to be a skin sensitizer.	No information available.
Reproductive Toxicity	Not considered to be toxic to reproduction.	No information available.
Developmental Toxicity	Not considered to be a mutagenic hazard.	Oxygen deficiency during pregnancy
		has produced developmental abnormalities
		in humans an dexperimental animals.





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## SECTION 12: ECOLOGICAL INFORMATION

### GAS:

#### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ozone depletion potential; ODP; (R-11 = 1):

Does not contain ozone depleting chemical (40 CFR Part 82).

### OIL:

#### Ecotoxicity:

Poorly soluble mixture. May cause physical fouling of aquatic organisms.

Product is expected to be practically non-toxic to aquatic organisms, LL/EL50 >100 mg/l. (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

#### Other Adverse Effects:

Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.



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## SECTION 12: ECOLOGICAL INFORMATION

### GAS:

#### Waste Disposal Methods:

Prior to disposal of product, gas pressure should be relieved to atmosphere in a well-ventilated place, and hydraulic fluid drained by a qualified mechanic.

### OIL:

#### Waste Disposal:

Recycle or dispose of in accordance with prevailing regulations, by a recognised collector or contractor.

The competence of the contractor to deal satisfactorily with this type of product should be established beforehand.

Do not pollute the soil, water or environment with the waste product.

#### Product Disposal:

As for waste disposal.

#### Container Disposal:

Recycle or dispose of in accordance with the legislation in force with a recognised collector or contractor.



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## SECTION 14: TRANSPORT INFORMATION

**GAS:**

**IATA**

**UN-No:**

UN1066

**Proper Shipping Name:**

Nitrogen, compressed.

**Hazard Class:**

2.2

**ERG Code:**

2L

**Description:**

UN1066, Nitrogen, compressed, 2.2

**Maximum Quantity for Passenger:**

75kg

**Maximum Quantity for Cargo Only:**

150kg

**Limited Quantity:**

No information available



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## OIL:

### US Department of Transportation Classification: (49CFR)

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

## IMDG:

This material is not classified as dangerous under IMDG regulations.

### IATA (Country variations may apply):

This material is not classified as dangerous under IATA regulations. 15.

## SECTION 15: REGULATIONS

Metrol Gas Springs contain no ingredients listed in the Regulations. Its products are in compliance with EU and follow REACH requirements.

## SECTION 16: OTHER INFORMATION

The information provided in this Safety Data Sheet is believed to be completed and correct.

Final user must be aware of all the information contained herein when using Metrol Gas Springs' products.

The correct application usage and proper assembling of the product on the application area is the sole responsibility of the user.

### Issuing Date:

06 May 2016

### Revision Date:

None at present.



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