

Headline Filters

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PRODUCT INFORMATION SHEET

SELF-INDICATING SILICA GEL (ORANGE/GREEN), 2 – 5 MM BEAD

Description – a narrow pored form of amorphous silica impregnated with an organic indicator (methyl violet). The beads gradually change colour from orange in the dry (activated) condition to dark green when saturated with water. Main applications are in breather units, desiccators and for general air drying purposes.

Typical Properties:

Moisture Content at 145°C	2.0% maximum
Equilibrium Capacity for water vapour at 25°C and given relative humidity (r.h.)	
20% r.h.	>8% w/w
35% r.h.	>12% w/w
50% r.h.	>23% w/w
80% r.h.	>30% w/w
BET surface area	>600 m ² /g
Pore volume	0.35 – 0.45 ml/g
Average pore diameter	20 – 30 Å
PH (10% aqueous solution)	1.8 – 2.2
Bulk density, grams/litre	700 – 800
Colour change	Dark Orange 10% w/w adsorption
	Olive Green 15% w/w adsorption
	Dark Green 20% w/w adsorption

Chemical Composition:

Silica SiO ₂	approx. 98% w/w
Humidity Indicator	approx. 0.2% w/w

Bead Size:

Less than 2 mm	5.0% maximum
Greater than 5 mm	5.0% maximum

This material is a non-toxic replacement for the traditional blue/pink self-indicating silica gel. This blue form was reclassified as a toxic material by the EC in 2000 because the colour indicator is a cobalt compound.

Regeneration can be carried out at temperatures between 100°C and 120°C.

SGOGBEAD.807

MATERIAL SAFETY DATA SHEET.

1) Product and Company Identification.

SELF-INDICATING SILICA GEL, ORANGE TO GREEN

2) Composition/Information On Ingredients.

Synthetic amorphous silica impregnated with indicator.
Silica 98.0% - CAS No. : 7631-86-9 EINECS : 231-545-4
Activated colouring agent 0.2% max. (Methyl Violet)

3) Hazards Identification.

The product is very adsorbent and may have a drying effect on skin and eyes.
Sensitisation of skin and respiratory system is possible. Exposure to dust could be harmful. Evolves heat on contact with water.

4) First Aid Measures.

1. After inhalation: remove to fresh air. Keep warm and at rest. Obtain medical attention if symptoms develop.
2. After skin contact: wash with water, if skin irritation persists seek medical advice.
3. After eye contact: flush with water, if irritation persists seek medical advice.
4. After ingestion: give water to drink, seek medical advice. Do not induce vomiting.

5) Fire Fighting Measures.

1. Products of combustion: not combustible.
2. Fire fighting procedures/extinguishing media: not applicable, unused material will not burn. Use media appropriate for surrounding fire.

6) Accidental Release Measures.

1. Personal precautions: respiratory protection if dusty, eye and hand protection.
2. Methods for cleaning up: sweep up or preferably vacuum up and collect in a suitable container for recovery or disposal. Avoid raising dust. Beaded material is slippery.

7) Handling and Storage.

1. Precautions during handling: avoid raising dust, vacuum up dust sources, prevent static electric sparks. Material is slippery if beaded.
2. Precautions during storage: store in sealed containers in a dry place.

8) **Exposure Controls/Personal Protection.**

1. General

Respiratory: effective dust mask.

Hand: protective gloves.

Eye: goggles, safety glasses.

Skin: overalls.

2. Exposure limits.

Amorphous silica

UK EH40:OES	8 hr. TWA	6 mg/m ³	total inhalable dust respirable dust.
UK EH40:OES	8 hr. TWA	2.4 mg/m ³	
ACGIH:TLV	8 hr. TWA	10 mg/m ³	

Activation agent

ACGIH:TLV	8 hr. TWA	0.5 mg/m ³
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9) **Physical and Chemical Properties.**

Appearance – orange beads or granules, in various sizes, that turn dark green on adsorption of water.

Odour – none.

pH 2 – 10 at 5% w/w in water.

Boiling point/melting point – not applicable.

Flammability/flash point – not applicable.

Density – 700 – 800 kg/m³

Solubility – less than 1% in water and solvents.

10) **Stability and Reactivity.**

Stability – stable, hygroscopic.

Conditions/materials to avoid – evolves heat in contact with water.

- avoid temperatures in excess of 150°C.

Hazardous decomposition products – no data available.

11) **Toxicological Information.**

Acute toxicity

Silica, amorphous – oral, LD50 > 15,000 mg/kg, rat.

Effects of exposure:

Inhalation – amorphous silica has little adverse effect on lungs and does not produce significant disease or toxic effect when exposure is kept below the permitted limits.

Existing medical conditions (e.g. asthma, bronchitis) may be aggravated by exposure to dust.

Eyes – dust may cause irritation.

Skin – heat may be evolved when in contact with water. May have a drying effect.

Carcinogenicity – amorphous silica is not classified as carcinogenic to humans.

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12) **Ecological/Biological Information.**

Amorphous silica is chemically and biologically inert. It is not degradable. By its insolubility in water, there is a separation at every filtration and sedimentation process.

13) **Disposal Considerations.**

Disposal according to national and local regulations.
This material is not classified as hazardous waste under the EEC Directive 91/689. This material is not classified as special waste under the UK Special Waste Regulations 1996 and can be disposed of by landfill at an approved site.

14) **Transport Information.**

Not dangerous goods according to the transport regulations of UK Road, RID-ADR, IMO, MARPOL and ICAO.
Not classified as dangerous goods under the United Nations Transport Regulations.
No special packaging requirements.

15) **Regulatory Information.**

EC Classification : this product is not classified as dangerous.
S phrases : Handle in accordance with good industrial hygiene and safety precautions.
Avoid inhalation of dust.

16) **Other Information.**

As with any material, general industrial hygiene and housekeeping standards should be observed.

This information is given in good faith and is based on information supplied by manufacturers of the material indicated. The suitability of the product for any particular use is not suggested or implied. The data does not constitute a specification and any properties shown are not guaranteed.

Note: This MSDS applies to the dry silica gel as supplied. The above criteria may change when it has been used depending on what material has been adsorbed.

Note: This self-indicating, orange-green, Silica Gel is often mixed with a larger percentage of white non-indicating Silica Gel. The MSDS for the non-indicating Silica Gel is almost the same as above.

Date June 2007

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