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1) PRODUCT AND PRODUCER IDENTIFICATION

Commercial denomination: ORANGE SILICA GEL

Use of the substance : DESICCANT SUBSTANCE, Drying agent used to absorb moisture from the environment. For dynamic and static water vapor absorption Desiccant product used inside vapour permeable wrapping materials to produce "desiccant bags" with chromatic desiccant activity indication.

When the Orange Silica Gel is yellow, the desiccant product is active, when it is exhausted the colour is light blue

Identified use:

Use of the product on its own, in this case, the worker can be in direct contact with the orange Silica Gel.

Use of Desiccant bag containing Orange Silica Gel. In this case the workers cannot be in direct contact with the product ,indeed thanks to the water vapour permeable envelope, the Silica Gel can absorb the moisture directly from the environment, and the worker must not open the desiccant bag .

Producer / Supplier: ZEST s.r.l.

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2) HEALTH HAZARD IDENTIFICATION

If the product is used inside the desiccant bags, the envelope of the desiccant bags it avoids the direct contact between the users and the desiccant material. The desiccant bag can not release significant quantity of dust. During the use, it is not necessary open the envelope of the desiccant bag , in fact the envelope is water vapor permeable.

The Orange silica gel is a chemical mixture, the chemical components (Amorphous silica - copper and magnesium salts) are deeply impregnated inside the micro porosity of the amorphous silica. Orange silica gel is a solid mixture in a solid gel. Orange Silica Gel is not classified as dangerous in conformity with Directive 1999/45 CE.

The death line for the classification of the mixture in conformity with the Regulation 1272/2008 CE (CLP / GHS) is the year 2015.

EC CLASSIFICATION:

Not classified as dangerous. (Directive 1999/45CE and Regulation CLP).

When in spherical form, the material is slippery.

Do not exceed the exposure limits.

Dust may cause sensitization by inhalation .

The active material absorbs gas and odors.

Electrostatic charges can accumulate.

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3) COMPOSITION / INFORMATION ON COMPONENTS

Chemical description: Indicating Silica Gel. Amorphous silica impregnated with copper and magnesium salts.

N° Cas	EC Number / Reach Registration Nr.	Component	%	Classificazione / Phrases R- S. Direttiva 67/548	Hazard statement Classification Regulation 1272/2008 (CLP/ GHS)
7631-86-9	231-545-4 / 01-2119379499-16-xxxx	Amorphous silica	> 97 %	-	Pictogram : - Hazard statements: -
7732 - 18 - 5		Water	< 2 %	-	Pictogram : - Hazard statements: -
10125-13-0	231-210-2 / 01-2119970306-36-xxxx	Copper (II) Dichloride	< 0,20 %	n ; R/22 N ; R50 Xi ; R41 Xi ; R38	Pictogram: GHS07 (Exclamation mark), GHS05 (Corrosion), GHS09 (Symbol environment). Hazard statement: H302, Harmful if swallowed H315, Causes skin irritation H318, Causes serious eye damage H400. Very toxic to aquatic life
7786-30-3	232-094-6 / 01-2119485597-19-xxxx	Magnesium Dichloride	0,5% min 1% max	-	Pictogram : - Hazard statements:-

Copper and magnesium salts are deeply impregnated inside the micro porosity of the amorphous silica, consequently it is not possible the mechanic separation of the components of the Orange silica gel.

4) FIRST AID MEASURES

General warnings: none, do not breathe dust , hand wash after product handling.

Inhalation: go to one aired place. If symptoms appear, see a doctor.

Skin contact: wash with soap and water.

If symptoms appear, see a doctor.

Eyes contact: wash richly with running water and see a doctor.

Ingesting: rinse the oral cavity and do not induce vomiting, if the quantity is high see a doctor.

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5) FIRE FIGHTING MEASURES

GENERAL: Not applicable. Inorganic powder or granules.

Not combustible.

Extinguishing material: use materials that are suitable for the surrounding fire.

Material not advised for security reasons: none.

Dangers due to the material combustion products: none.

Protective equipment for extinguishing fire operations: Protective equipment for extinguishing fire operations: use equipment for the surrounding fire .

6) ACCIDENTAL FREE OUTLET MEASURES

People protective measures: do not inhale the dust, wear protective clothes.

Environment protective measures: inform the authorities if a big quantity of product can come into contact with water.

Cleaning/collection method: mechanical collection of the material, avoiding dusting; put it in suitable containers for recovery or disposal .

7) HANDLING AND STOCKING

Handling : Orange Silica Gel is a desiccant material, the product need to be stocked in dry place, hermetically closed.

During the use, it is necessary to minimize the time of exposition of the silica gel to the air before the use.

Warning for usage: Avoid dusting, dust suction.

When in spherical form, the material is slippery.

During mechanical handling electrostatic charges can accumulate.

The use of some kgs of product does not cause electrostatic charges accumulation.

Warning for fire/explosion: none.

Stocking :

Store/container type: dry place/closed.

Common stocking warnings: avoid contact with hydrofluoric acid.

8) EXPOSURE CONTROL / PERSONAL PROTECTION

The use of the Silica Gel Orange inside a desiccant bag it minimizes the contact between the Silica Gel and the workers.

The use of the silica gel in industrial plants where it can be possible the presence of breathable dust, it requires the check of the limit values for the following components:

Components with limit values to be checked:

Name	Exposure limits	ref. to Standards
Breathable amorphous silica	3 mg/m ³ in 8 hours	UK EH40/95
Amorphous inhalable silica total dust	6 mg/m ³ in 8 hours	UK EH40/95
Silica gel	10 mg/m ³ in 8 hours	ACGIH
Copper	1 mg/m ³ in 8 hrs.	ACGIH (pure compound)
Magnesium chloride	10mg/m ³ in 8 hrs.	ACGIH (pure compound)

Work environment protection:

Mechanical methods to reduce and control exposure are preferred, as suction systems and process enclosure ; in accordance with good industrial hygiene practices.

General measures for protection and hygiene:

wash carefully the exposed parts before breaks and at the end of the work, do not eat, drink or smoke. Breathing protection: use anti-dust mask in case of dusting.

Hand protection: In case of manipulation for long time, use protective gloves to protect the skin against the dry.

Eyes protection: use protective glasses only to protect against the grains of silica gel or the dust.

Body protection: Not necessary.

9) PHYSICAL AND CHEMICAL PROPERTIES

Description: Orange Silica gel is spherical form (beads)

Silica gel is a hygroscopic material, it absorb and release water vapor.

Color: Dry material color : Yellow /Amber.

Wet material color : Aquamarine light blue

Odor: odorless .

Melting point: over 1000°C.

Boiling point: not applicable.

Flash point: not applicable.

Combustion temperature: not applicable.

Spontaneous ignition: not applicable.

Explosion: not applicable.

Deflagration limit: not applicable.

Vapour pressure: not applicable.

Solubility in water: silica gel is not soluble.

pH: 3.5 - 7 at 5% w/w in water.

Viscosity: not applicable.

Density: 700 – 800 g/l.

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10) STABILITY AND REACTIVITY

Hygroscopic

Conditions to avoid: none if prescribed handling and storage are followed.

Materials to avoid: contact with hydrofluoric acid and unstable fluoridated compounds.

Decomposition products: none if prescribed handling and storage are followed.

The material absorbs gas and odors.

11) TOXICOLOGICAL INFORMATION

The Orange silica gel contains less than 0,20% w/w of copper chloride dihydrated.

The product has little noxious consequence on lungs and it does not cause illnesses or toxic effect if exposition is inferior to the prescribed limit, but it can aggravate pre-existent diseases like asthma and bronchitis. The effects may increase in smokers.

Sensitization: no available data. Practical experiences: in presence of dust, light irritations to eyes and mucous membranes can come out, drying up the skin.

12) ECOLOGICAL INFORMATION

Orange Silica Gel is an inert substance for the environment. Not possible ecological damage are detectable.

13) DISPOSAL INFORMATION

Warning: observe the limits of the current regulations .Code nr. or waste name : The user must choice the CER code. We can suggest the code CER150203.

The exhausted product may show different characteristics compared to the dry material, in fact it can contains the chemical substances absorbed during the use.

Modify CER code if dangerous substances have been absorbed.

This material is not classified as hazardous waste under EEC Decision CEE 2000/532/CE, 2001/118/CE, 2001/119/CE e 2001/573/CE

14) TRANSPORT INFORMATION

The product is not subject to transport regulations.

Not a dangerous good as defined by the following regulations :

RID/ ADR :

ADRN/ADN :

OMI/IMDG:

IATA / OACI:

RTMDR:

Packaging: No special packaging requirements.

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15) REGULATORY INFORMATION

EC CLASSIFICATION: Not classified as Dangerous. (Regulation 1272/2008).

Marking: the product does not need any mark.

Marking and danger indication: none.

S-caution suggestions: Avoid inhalation of dust .

Handle in accordance with good industrial hygiene and safety practices.

16) OTHER INFORMATION

REACH: Orange silica gel does not meet the criteria for classification as dangerous in accordance Regulation 1272/2008. Orange Silica Gel does not contain substances in concentration > 1 which cause human health hazard or environmental hazards, or substances assessed to be PBT or vPvB, or substances for which there are Community workplace exposure limits. Moreover Orange Silica Gel does not contain substances SVHC or substances in the "candidate list " ("candidate list" in the last revision at the moment of the emission of this material safety data sheet)

For the above reasons, no exposure assessment is required for this mixture and the communication of uses and exposures along the supply chain are not required according to the REACH – Regulation.

These data are based on our present knowledge and experiences, they are not considered exhaustive. These information cannot be considered as a specification on the product or as a warranty on any of its particular characteristics. No liability can be accepted for losses, accidents or damages resulting from the use of these information.

Direttive di riferimento / Directive reference / Directives appliqués / Richtlinie:

This document is in conformity with the Article 32 of the REACH REGULATION 1907/2006 (Substances and products out of the article 31.1 and 31.3 of the Reg. 1907/2006).

Duty to communicate information down the supply chain for substances on their own or in preparations for which a safety data sheet is not required.

END OF THE DOCUMENT

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