ENGLISH

TECHNICAL DATA SHEET

RS 388-8437
Indicating Silica Gel

These sachets have been developed specifically for the electronics industry and provide both moisture and electrostatic protection.

The silica gel contained in the sachets is a narrow pore desiccant suitable for both dynamic and static drying. It also has the ability to absorb other polar gases i.e. hydrogen fluoride. The gel is an indicating gel, i.e. it changes colour when it has absorbed the maximum moisture. The silica gel conforms to BS2540, German DIN Standard, US military MIL-D-3464E and French AFNOR specifications.

- High absorption capacity
- Easy to regenerate
- Retains characteristics of a dry product even when saturated with water vapour
- Chemically inert and non-toxic
- Long Life

Typical Properties

SiO_2	99% min
Reactivation Temperature	100-160°C
Absorptive Capacity @ 25°C 50% RH	27% min

At 25°C and 20% RH, the gel can absorb about 12% of its weight in water vapour. At 60% RH this rises to 32%. The silica gel remains free flowing and dry even when the maximum capacity is reached.

At °C and 80% RH, the gel can absorb about 35% of its weight in water vapour in under 8 hour.

Packaging	Order Code
5g sachets	RS 388-8437

Silica-Gel – How much do I need to use?

There are a lot of factors to include into calculating the necessary amount of Silica-Gel. Depending on climate and used material there are different calculation formulas existing, e.g.:

Table 1 **Calculating requirements**

EQUATIONS

W	=	40 ARM + DF for tropical climates
W	=	11 ARM + DF for temperate climates
W	=	170V + DF for an hermetically sealed package

WHEN

W	=	Weight in grammes of basic desiccant, (i.e. silica gel)
A	=	Area in square metres of the moisture vapour barrier.
R	=	Moisture vapour transmission rate of the barrier in grammes per square metre per 24 hours, measured at 90% RH and 38°C (100°F).
M	=	Maximum time in months of storage.
V	=	Volume of cubic metres of air inside the barrier (this is generally taken as the volume of the hermetically sealed container).
D	=	Weight in grammes of blocking, cushioning and other packing material inside the barrier (including cartons, etc.).
F	=	Factor, depending on type of dunnage.

Factors (F):

1/5	For timber of moisture content higher than 14%.
1/8	For felt, carton board and similar packaging work.
1/10	For plywood and timber with a moisture content less than 14%.

For hermetically sealed packages which are mostly used it is more simple:

$W = 170*V + D*F$

W = Weight in grams of the necessary Silica Gel
V = Volume in cubic meter of the air withing the packaging
D = Weight in grams of blocking, cushioning and other packing material inside the package
F = Factor (details see above Box)

A basic rule is also (after some research online) a value of 500 grams per cubic meter (valid for general conditions and only for 180 days).

It is better to always use a little more on silica gel as given through the calculation.

GERMAN TRANSLATION:

Es sind sehr viele Faktoren zu berücksichtigen, bei der Berechnung der nötigen Menge Silica-Gel. Hierzu finden sich verschiedene Berechnungs-Formeln (siehe Box oben).

Für hermetisch dichte Verpackungen (z.B. PE-Sack) ist die Berechnung vergleichsweise einfach:

$W = 170*V + D*F$

W = Gewicht in Gramm des benötigten Silica Gels

V = Volumen in Kubikmeter der Luft innerhalb der Verpackung

D = Gewicht in Gramm des in der Verpackung vorhandenen Verpackungs- oder anderen Materials

F = Faktor, abhängig vom Packmaterial (1/5 für Holz mit mehr als 14% Feuchtegehalt; 1/8 für Filz, Karton o.ä.; 1/10 für Sperrholz oder Holz mit weniger als 14% Feuchtegehalt)

Als Grundregel kann auch (lt. Recherche) ein Wert von 500 Gramm / Kubikmeter Volumen genommen werden (gilt für allgemeine Bedinungen und nur für 180 Tage).
Besser ist es, immer etwas mehr an Silicagel zu verwenden als bei einer Berechnung sich ergibt.