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High Capacity Getters for Hermetically Sealed Devices

Overview

Based on well established zeolite technology with additional precious metals for tailored absorption, these materials offer a highly flexible getter system.

The performance is generally superior to similar printable types already on the market. This performance is delivered at a low cost. The activation process is simple and, if necessary, repeatable. HGI Series getters are supplied as a cured deposition on a suitable substrate (typically a package lid). Once cured, this substance will not out-gas any organics into the housing. This material is suitable for a wide range of packaging types and applications. Contact us to discuss your particular requirement.

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Technical Advantages

There are our three standard versions currently available: HGI 1: for hydrogen and moisture; HGI1 Lite: for reduced hydrogen capacity; HGI 2 or moisture only; HGI 3L: for moisture and organics with reduced activation temperature.

Туре	Hydrogen	Moisture wt%	Organics wt %
HGI 1	50cm ³ /g	7%	-
HGI 1 Lite	20cm ³ /g	10%	-
HGI 2		15%	
HGI 3L	-	5%	5%

Approximate Adsorption Capabilities (weight basis of cured inks):

- Density of cured getter is 1g/cm³
- Maximum processing temperature s 140°C; Maximum operating temperature is 120°C.
- Material is fully RoHS compliant.
 - When applied to Ni plated Kovar, ink passes environmental testing per the following methods from Mil-Std-883G:
 - Constant Acceleration method 2001.2 condition A (5000g for 1 minute)
 - Temp Cycle method 1010.8 condition C (100 cycles, -65°C/150°C)
 - Vibration method 2007.3 condition A (1.5mm pk-pk / 20g pk min, 20-2000Hz, 4 sweeps on each of 3 mutually perpendicular axes at 3 oct/min)
 - Mechanical Shock method 2002.4 condition B (1500g 1/2ms half sine, 5 shocks in each direction of 3 mutually perpendicular axes).

Customized Versions

A further advantage of this system is the relative ease of developing new variations for specific applications. Additional zeolite types or precious metals can be added to adsorb specific gases.

HERMETIC SOLUTIONS GROUP

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Typical Performance Characteristics of HGI Series Getter

Getter Activation

- Fast activation times at modest temperatures
- Lower temperature activation also possible under higher vacuum conditions
- Activation profiles can often be tailored to match existing pre-lid bake operations



Moisture Capacity as a Function of Operating Temperature





- Getter should remain in dry nitrogen after activation to prevent re-absorption of moisture from the atmosphere
- If necessary, the getter can be reactivated up to 10 times without loss of performance

Getter Capacity Loss Upon Atmospheric Exposure @ 25°C



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Getter Performance (Typical)

- Moisture capacity still significant even at elevated temperatures
- Hydrogen capacity is not effected by temperature