

TO Window Caps with Integrated Hydrogen, Moisture Getters

Overview

The Hermetic Solutions Group's MIL-0-13830 hermetic TO window caps can now be configured to include an integrated getter.

These windows feature the Hermetic Solutions Group's ink getter material applied to a flexible tab which is then tack welded inside the window frame.

The tab's location will not interfere with the window's viewable area.

Window glass material and frame material combinations include: borosilicate/Kovar F-15; soda lime/stainless steel alloy, sapphire/Kovar F-15 and 8337 borosilicate/Kovar F-15.

The getter material is based on HSG's established getter technology.

This combination results in a high-reliability, MIL-Spec hermetic window that will increase a product reliability by absorbing moisture and hydrogen out-gassed by a TO package device electronics.



Technical Specifications

Moisture PU wt % (Min)	Av. Hydrogen (cm ³ /g of sample)	Temp. Stability °C
10	50	325

- Density of cured getter is 1g/cm³
- Maximum processing temperature: 325°C;
- Maximum operating temperature: 250°C. Moisture getter effective up to 100°C. Hydrogen getter is unaffected by temperature.
- Getter material is fully RoHS & REACH compliant.

HERMETIC SOLUTIONS GROUP

Enabling Technology

Typical Getter Performance Characteristics

Getter Activation

- Fast activation 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.

Getter Performance (Typical)

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

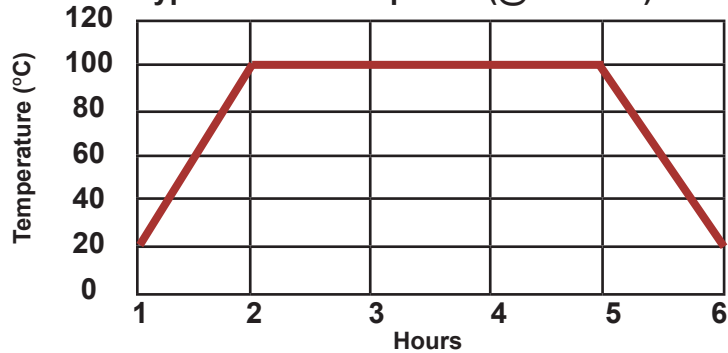
Moisture Capacity Loss Upon Atmospheric Exposure (Post Activation)

Getter should remain in dry nitrogen after activation to prevent re-absorption of moisture from the atmosphere.

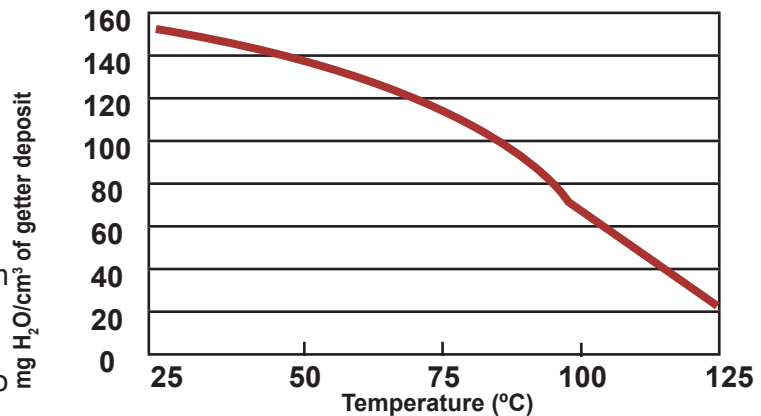
If necessary, the getter can be reactivated up to 10 times without loss of performance.

Hydrogen capacity is not affected.

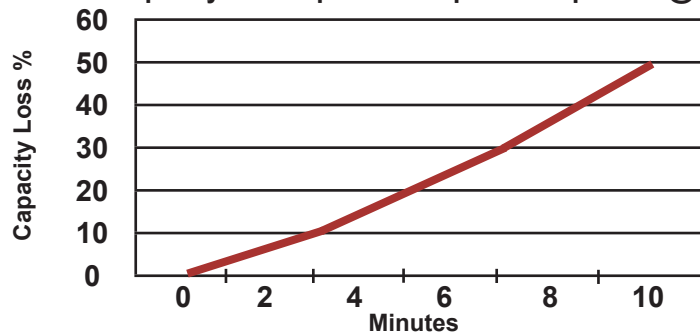
Typical activation profile (@20 mtorr)



Moisture Capacity as a Function of Operating Temperature



Getter Capacity Loss Upon Atmospheric Exposure @ 25°C



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