

Technical Data Sheet CMS HF-GUARD

Revision Date: 10/03/2025

Description:

- A protective non-reactive ceramic coating used to prevent metal reactions with ceramic cores or shells
- used in Investment Casting Foundries.
- This single component refractory spray coating has no silica content. It comes as an engineered aqueous ceramic slurry ready for spray application.

Advantages:

- Highest level of protection from reaction with Hf, Ti, Re, Y components in alloys
- Extremely high temperature stability
- Effective for all forms of investment casting (directional solidification, single crystal and equiaxed shells)

Directions For use:

- Use a roll mill to ensure uniform suspension of CMS HF-GUARD.
- Prepare surfaces and coat as follows:
 - Cores
 - Core surfaces must be free from organic infusions or impregnations.
 - Clean all dust and debris from affected surfaces.
 - Prewet the surfaces with deionized water
 - Load a high-quality professional spray gun or if applying small sections a high-quality air brush
 - Apply a 0.0003 – 0.001” thick layer of CMS HF-GUARD to core surface.
 - The surface should NOT look wet. It should dry almost immediately.
 - A hard set will take place within 1 to 3 hours.
 - Wax Patterns
 - Clean pattern surface with a pattern wash and etch such as Westech PC205
 - Mask off sections that need to be protected from metal shell reaction.
 - Spray sections of the wax pattern with HFGUARD
 - Let dry for no more than ½ hour.
 - Dip in prime face coat and proceed with standard shelling process.

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Testing Results:

- This material is free from any silica.
- Test results for typical aerospace trace elements are reflected on the trace element tables presented here.

Trace Element Analysis	
CCS CrackAttack® NOSIL	
Element	Typical
Lead (Pb)	<25
Bismuth (Bi)	<1
Silver (Ag)	<10
Antimony (Sb)	<5
Zinc (Zn)	<50
Tin (Sn)	<25
Iron (Fe)	<500
Arsenic (As)	<1
Selenium (Se)	<1