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**PRODUCT DATA SHEET: PowerKote™ CBX Cermet Thermal Barrier**

**Part#: CBX**

**SELECTION DATA**

**PRODUCT DESCRIPTION:**

CBX is a metallic ceramic coating designed to be used on combustion chamber surfaces and piston tops. CBX is formulated to be used specifically in engines with 12:5 to one compression ratios, or using nitrous oxide, a supercharger or turbocharger though it may be used on lower compression naturally aspirated engines as well.

Similar to CBC-2, CBX provides a hard, durable thermal barrier overlay to any coated component. CBX provides for reduced part temperature, resistance to detonation, increased combustion chamber efficiency, reduces retained surface heat after the power stroke reducing the potential for pre-ignition. More efficient oxidation of fuel also occurs, leading to increased power output. CBX allows minimal transfer of heat into the coated surface thus reducing part operating temperature as well as reducing the load on the cooling system. Extremely effective in high power, high fuel volume engines.

CBX may also be used on components and materials that cannot handle the cure temperature, in an air dry form, such as composites which will be exposed to extreme temperatures, and will still function as a thermal barrier and reflect heat.

**RECOMMENDED USES:**

DFL-1 is primarily a high pressure lubricant and is recommended for use on any part subject to sliding or rotational friction. Gears, machinery slides, camshaft assemblies, piston skirts and bearings all benefit from an application of DFL-1. DFL-1 was initially designed to be applied to rod and main bearings. DFL-1 has excellent adhesion to soft substrates as well as harder surfaces. Excellent for high temperature lubrication in steel mills.

**NOT RECOMMENDED FOR:** Substrates that cannot handle the cure temperature.

**APPLIED FILM THICKNESS:** .0005” to .001”

**HRC (Equivalent Rockwell C Scale):** N/A

**ADHESION (Tape Test ASTM D 3359):** 5B

**PENCIL HARDNESS TEST:** in excess of 8H

**IMPACT TEST (ASTM D 2794 2 lb. Weight):** 48” on both sides of a coated plate and no delamination occurred.

**FLEXIBILITY/BENDING ADHESION:** 180° no delamination.

**THERMAL TEMPERATURE RESISTANCE:**  
Adhesion to over 2000°F intermittent environmental and 1300°F substrate.

**SALT SPRAY RESISTANCE (ASTM B117):** 1000 hours

**CORROSION TEST DATA:** Good

**ACCEPTABLE SUBSTRATES FOR APPLICATION:**  
Ferrous and non-ferrous substrates, plastics and composites that can handle the cure temperature.

**THERMAL SHOCK:** Pass

**ELECTRICAL PROPERTIES:** Conductive

**CHEMICAL RESISTANCE:** Good

**FILM TYPE:** CBX forms an impregnated film on the substrate; except in the case of aluminum where a chemical reaction occurs during curing that joins the coating to the aluminum with no clear boundary between both, in effect becoming part of the aluminum component.

Note: N/A refers to characteristics that are not applicable to this type of coating.