



KBS Hi-Temp Application Information



KBS Hi-Temp is a high temperature/heat resistant coating formulated specifically to protect metal surfaces operating at temperatures from 500°F (260°C) to 1500°F (812°C). With proper preparation, KBS Hi-Temp provides outstanding adhesion, film integrity, corrosion, weathering and thermal shock-resistance throughout this entire temperature range, and is guaranteed not to burn off!

To achieve expert results, please take the time to carefully read and understand the following directions before you begin your restoration project. These directions are meant to be general guidelines only and do not cover every application or environmental situation. If you have remaining questions or concerns, please call us toll-free for technical assistance.

ALWAYS WEAR PROTECTIVE GLOVES AND SAFETY GLASSES. ALWAYS WORK IN A WELL-VENTILATED AREA. Please heed all warning and caution notices on all KBS products.

RECOMMENDED USES:

Engines, Manifolds, Headers, Mufflers • Furnaces, Kilns, Ovens, Stoves • Compressors, Turbines • Stoves (wood, coal, pellet, gas, etc.) • Fireplace hoods, screens, & accessories

FEATURES:

Withstands continuous temperature of up to 1500°F (812°C) • Outstanding heat and weathering resistance • Will not peel, flake, or chalk • Long Lasting • Dries for handling in 15 mins • Once heat cured, is resistant to scratching & marring

NOT RECOMMENDED FOR:

Parts that will be immersed • Direct contact with open flame • Cooking surfaces

SURFACE PREPARATION:

Steel surface to be primed must be dry and free from dirt, oils, rust, and other contaminants. Sandblasting is the ideal surface preparation as it leaves the ideal anchor pattern for paint adhesion. After sandblasting, use clean compressed air to blow off any residual blast media. Be sure to wear surgical-type gloves when handling to keep natural body oils off the prepared surface. If not sandblasting, prepare surface by using wire wheel, wire brushing, or abrasive sanding using 60-80 grit paper. This method will provide a surface equivalent to that provided by sandblasting and allow the desired surface profile or anchor pattern. Wash surface with KBS AquaClean at a 10:1 (Water/AquaClean) ratio, rinse and let dry thoroughly, or a thorough wipe down with Acetone or Xylene is recommended to wash away residual oils. Allow surface to thoroughly dry before proceeding. Mask off areas not to be coated & protect adjacent areas with drop cloth or newspapers. For best results, apply when Hi-Temp and room temperatures are between 60-80° F (16-27° C).

MIXING:

Do not open containers until ready to use. Re-disperse any settled-out pigments by stirring with a paint paddle or power mixer to a uniform consistency. Keep lid on container when not in use

COVERAGE:

Theoretical coverage at one mil (25 microns) is 400 (Alum)/300 (All Others) sq.ft. per gallon OR 9.6 (Alum)/7.0 (All Others) sq.m. per liter. Recommended thickness of two mils (50 microns) would require two full coats. Material losses during mixing and application will vary and must be taken into consideration. Expect up to 30% less coverage on rough surfaces. Aerosol can theoretically covers 8 sq. ft.

APPLICATION:

Ideal application temperatures of air & substrate to be coated are 50-82°F (15-28°C). KBS Hi-Temp may be applied by conventional or HVLP spray, airless spray, brush or roller. Do not apply KBS Hi-Temp in heavier films than specified since blistering may occur. For maximum corrosion protection, metal surfaces should be primed with KBS Hi-Temp Primer or silicone zinc dust heat and corrosion resistant primer (approx. 1.0 mils/25um DFT), then topcoated with one coat (1.0 mils/25um DFT) of the Hi-Temp color of your choice.

If not using KBS Hi-Temp Primer, apply two coats (1.0 mils/25um DFT each) of KBS Hi-Temp allowing at least 8 hours between coats and allow the second coat to dry at least 8 hrs before subjecting surface to any heat. The number of coats of KBS Hi-Temp needed depends upon service conditions of equipment.

SPRAY APPLICATION:

FOLLOW ALL CAUTION & WARNING NOTICES WHEN SPRAYING. ALWAYS WEAR AN AIR SUPPLIED RESPIRATOR: NIOSH/MSHA approved organic vapor particulate respirator. Spray pressure of 35-45 psi (250-330kpa) for siphon/pot guns and 25-35psi (170-250kpa) for gravity/top container guns. Thinning is not generally required but if needed 5%-10% is normally adequate. Use KBS #1 Thinner only which is a slow evaporating solvent. Do not reduce Hi-Temp with lacquer thinner. Also remember to clean your spray gun immediately after using Hi-Temp.

BRUSH APPLICATION:

FOR BEST RESULTS, use natural bristle or foam/sponge brushes. Apply thin covering coats (1.5-2.0 mils/35-50um wet film thickness). Do not flood surface with coating. As with all KBS Products, multiple thin coats is always the best practice. Brush out thoroughly, maintaining a continuous wet edge and uniform appearing paint film. Do not over work brushing while attempting to eliminate brush marks. Whatever brush marks don't flow out during air dry process will flow out during initial heat curing. Do however avoid runs or drips. Allow first coat to air dry at least 8 hrs before applying recommended second coat. Allow second coat to cure at least 8 hrs before subjecting to temperature curing.

AEROSOL SPRAY APPLICATION:

For best results, apply when spray can and room temperatures are between 60-80° F (16-27° C). Shake can vigorously for one minute after mixing ball rattles freely & periodically during use to ensure proper mixing and to prevent spray head from clogging. Repeat shaking frequently during use. Hold can 12-15 inches from surface and apply using steady, even strokes. Apply a minimum of two light coats, avoiding drips & runs. Allow 15-30 minutes drying time between coats. Heavy applications can lead to reduced coating life/adhesion. Clean spray head immediately after use by turning can upside down and spraying until no more paint appears. If clogging occurs, remove spray head and clean with a fine wire. Replace carefully, pointing can and spray head away from you. Allow painted surface to dry a minimum of 8 hrs before subjecting to high heat.

TEMPERATURE CURING:

After proper dry time, coating will be dry to the touch and can be handled using care, but resins will not reach full hardness until heated to approx. 350° F (176° C). For headers or manifolds, this can be done in an oven, BBQ, or by mounting back on engine and run to normal operating temperature. NOTE: Coating can emit potentially harmful vapors during the first few heat/cool cycles. Allow for full and proper ventilation during initial heat curing. Avoid excessive heat during this initial "break-in" period, as the resins need to be tempered into the substrate to provide proper adhesion

THINNING:

KBS Hi-Temp can be thinned up to 5% (20 parts paint/1 part thinner). Only thin using KBS #1 Thinner. Note: Use of other thinners not approved by KBS may hinder product performance and void product guarantee.

DRY TIME:

70°F (21°C) 50% RH. KBS Hi-Temp will air dry tack and thumb print free within 1/2-1 hour. Allow at least 8 hours dry time between coats. Allow at least 8 hour solvent flash off period before heat curing or placing into service. **Optimum film properties require a heat cure of 350°F (176°C) for 20 minutes.** Equipment such as exhaust manifolds & headers protected with the KBS Hi-Temp in the air-dried state will heat cure when placed into service.

CLEAN UP:

Thoroughly flush spray equipment and hoses immediately after use with KBS #1 Thinner or lacquer thinner. Dismantle spray equipment and clean parts, brushes or rollers.

STORAGE:

Store in a cool, dry place with temperatures between 50°F and 100°F (10°C and 38°C). Keep container closed when not in use.

QUESTIONS & TIPS:

Q. Do I need to sandblast?

A. No, while a sandblasted surface is ideal for cleaning & providing an ideal anchor pattern or coating adhesion, wire brushing and/or abrasive sanding with 60-80 grit sandpaper will work well also.

Q. How many coats of Hi-Temp do I really need?

A. We recommend a minimum of two coats of Hi-Temp or one coat of Hi-Temp Primer & one coat of Hi-Temp (color of your choice). Additional coats of Hi-Temp will just add to the durability and corrosion protection.

Q. Do I need to heat the surface before painting?

A. No, the surface should be at room temperature 50-82°F(15-28°C) during application. Do not apply to a hot surface.

Q. Do I need to heat cure after application?

A. Yes, while the surface will dry to the touch within 1/2-1 hour, the coating will not reach it's full cure until it reaches approximately 350°F (176°C).

Q. Do I need to heat cure between coats?

A. No, heat curing between coats is not necessary, but will not hinder subsequent coats of Hi-Temp.

TECHNICAL DATA:

Characteristics	Jet Black, Cast Iron Grey, Flame Blue & Off-White		Aluminum	
Generic Type	Silicone		Silicone	
Color	Black, Grey, Blue & Ivory		Silver	
Temperature resistance Continuous Intermittent	1500°F (815°C) 1600°F (871°C)		1500°F (815°C) 1600°F (871°C)	
Percent (%) Solids by Volume	18 (varies with color)		25	
Viscosity	300-450 cps (varies with color)		300-450 cps	
Dry film thickness per coat	0.75-1.0 mils (19-25 µm)		1.5-2.0 mils (19-25 µm)	
Wet film thickness per coat	4-5 mils (100-125 µm)		6-8 mils (150-200 µm)	
Theoretical coverage	289 mil. sq.ft. (27 sq.m. @ 25µm)		401 mil. sq.ft.	
Drying time @ 50% RH To Touch To Handle To Recoat To Ship	50°F (10°C) 50 minutes 1 hour 10 hours 42 hours	70°F (21°C) 25 minutes 30 minutes 7 hours 20 hours	50°F (10°C) 1 hour 1 hour 15 mins 12 hours 48 hours	70°F (21°C) 30 minutes 40 minutes 8 hours 24 hours
Full cure @ 350°F (176°C)*	30 minutes		30 minutes	

Characteristics	Jet Black, Cast Iron Grey, Flame Blue & Off-White	Aluminum
Weight per gallon	8.8 lb. (4.1 kg.)	9.6 lb. (4.3 kg.)
Flash Point	45°F (7°C)	45°F (7°C)
Pot life	N/A	N/A
Shelf life	1 year	1 year
Volatile organic compounds	5.85 lb./gal. (696 g./l.)	5.3 lb./gal. (630 g./l.)

*See Dry Time Section

Please remember these instructions are general guidelines only and do not cover every application and environment. If you remain unsure as how to proceed, refer to product instruction sheet, our website @ www.KBS-COATINGS.com, or please call toll-free for technical advice at 877 548-9323.

THIS COATING IS INTENDED TO BE USED UNDER THE FOLLOWING CONDITIONS; AUTOMOTIVE AND INDUSTRIAL USE, VOC 696g/l
PRECAUTIONARY INFORMATION. Please follow all warning and caution notices.

WARNING: Flammable Liquid and Vapor. PROPER EYE PROTECTION IS REQUIRED.

Keep away from heat, sparks and flame. Vapors may cause flash fire. Do not breathe vapors or spray mist. Avoid contact with eyes, skin and clothing. Use with adequate ventilation during mixing and application. Wear an appropriate, properly fitted organic vapor cartridge-type respirator (NIOSH approved) during and after application unless air monitoring demonstrates vapor/mist levels are below applicable limits. Follow respirator manufacturer's directions for respirator use. Wash thoroughly after handling. Wear protective gloves, chemical safety goggles and impervious protective clothing. Use skin cream. In confined spaces it is required to use a positive pressure supplied-air respirator (NIOSH approved). Use explosion-proof lights and electrical equipment. Use only non-sparking tools and equipment. Wear conductive and non-sparking footwear. Make certain all electrical equipment is grounded. Observe all safety precautions and follow procedures described in OSHA regulations. See Material Safety Data Sheet (MSDS) for complete precautionary and disposal information.

If instructions and warnings cannot be strictly followed, do not use this product.

FIRST AID: IN CASE OF SKIN CONTACT, REMOVE IMMEDIATELY BEFORE DRYING. IN CASE OF CONTACT WITH EYES, FLUSH THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES AND SEEK IMMEDIATE MEDICAL ATTENTION. IF YOU ARE EXPOSED TO A HIGH CONCENTRATION OF VAPORS OR YOU EXPERIENCE DIFFICULTY BREATHING, LEAVE THE AREA TO OBTAIN FRESH AIR. IF BREATHING DIFFICULTIES CONTINUE, SEEK MEDICAL ATTENTION. IF SWALLOWED, CALL A PHYSICIAN IMMEDIATELY. DO NOT INDUCE VOMITING. HARMFUL OR FATAL IF SWALLOWED.

NOTICE: REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN OR NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

CAUTION: KEEP OUT OF REACH OF CHILDREN.
USE WITH ADEQUATE VENTILATION. DO NOT TAKE INTERNALLY. SEE MSDS FOR ADDITIONAL INFORMATION.

Manufactured by Advanced Protective Technologies, LLC. - Made in the USA.

Information contained herein is to our knowledge true and accurate, but all recommendations or suggestions are made without guarantee. Since application lies outside our control, we cannot accept any liability for the results. User shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith.

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