

**TYPE**

A high solids modified epoxy cured with an amine adduct curing agent. Designed specifically as a high chemical-resistant, non-toxic, odorless coating.

**INTENDED USE**

Primarily as a tank lining and equipment coating material for the food and beverage industries. This material, when properly applied and force cured, will not impart taste or odor. PLASITE 9060 meets the FDA requirements for 21 CFR, 175.300. PLASITE 9060 white, Lt. gray and Lt. blue have been accepted by the U.S. Department of Agriculture for use in direct food contact areas.

**TEMPERATURE RESISTANCE**

Dry temperature basis is 400°F/204°C for short periods; 250°F/121°C continuous. Immersion temperatures depend on particular reagent.

**COLORS** White; Lt. Gray; Lt. Blue

**FILM THICKNESS PER COAT**

A 6 to 7 mil/150 to 175 microns film is easily produced in one multi-pass spray coat.

**COVERAGE**

1315 mil ft<sup>2</sup> or 118.3 m<sup>2</sup> per gal. (theoretical). For estimating purposes, 81 ft<sup>2</sup>/gal. will produce a 13 mil/325 microns film (20% loss included). Two to three coats will produce a 12 to 15 mil/300 to 375 microns film for immersion service.

**VOC CONTENT**

Lt Gray Color	Coating as Supplied (ASTM Method D2369)		Thinned 10% by Volume with PLASITE Thinner #71 (Determined Theoretically)	
	Lbs./Gal.	g/L	Lbs./Gal.	g/L
9060	1.37 ± 2%	165 ± 2%	1.84 ± 2%	220 ± 2%
9060 HAR	1.32 ± 2%	158 ± 2%	1.98 ± 2%	237 ± 2%

VOC Content varies between colors. Contact Carboline Technical Service Department for VOC of specific colors.

**DRYING TIME**

Surface will normally be tack-free in 10 to 12 hours at 70°F/21°C. Curing will take place in 5 days at 90°F/32.2°C and 7 days at 70°F/21°C. For specific cure instructions, see CURING section. Force curing is required to prevent possible taste and odor pickup by sensitive food products.

**RECOAT TIME**

Must be topcoated within two weeks for metal temperature exposure to 130°F/54.4°C. For temperature exposure of 131 to 150°F, must be topcoated in a maximum of 24 hours.

**THINNERS**

PLASITE Thinner #71 is recommended. The amounts required will vary depending upon air and surface temperatures and application equipment. Normal application temperatures and conditions will require addition of approximately 5 to 10% by volume with approximately 5% additional thinner added for each 5°F/3°C of increased temperature. It is recommended that the amount of thinner included on each order amount to approximately 20% of the coating order.

**CLEANUP THINNER:** Thinner #71

**PRIMER**

Primers of the inhibitive type must be used when steel surfaces are not blasted to white metal and when finish coatings are below 8 mils in thickness. Contact Carboline for recommendations.

**PHYSICAL SPECIFICATIONS**

**Pigments:** Titanium dioxide, inert fillers and tinting colors.

**Solids:** 9060: 89 ± 2% by weight; 80 ± 2% by volume.  
9060 HAR: 90 ± 2% by weight; 80 ± 2% by volume

**Pot Life:** Approximately 1 hour at 70°F.

**Shelf Life:** 6 months minimum (12 months maximum) at 70°F. Film build drops upon aging.

**Shipping Weight:** Approximately 13-14 lbs (6 kg) per gal.

**Mixing Ratio:** 1 part of curing agent to 4 parts of coating material by volume.

**\*Abrasion Resistance:** 9060: 70 milligrams average loss  
9060 HAR: 15.5 milligrams loss  
1000 cycles, Taber CS-17 Wheel, 1000 gram weight.

**\*Surface Hardness:** Konig Pendulum Hardness of 152 seconds for 9060 and 120.6 seconds for 9060 HAR. (Glass Standard = 250 seconds); ASTM Method D4366-84.

**Thermal Shock:** Unaffected 5 cycles, minus 70°F/21°C to plus 200°F/93.3°C.

**Gloss:** 72 at 60°.

**\*Note:** Above tests were conducted on film cured at 150°F/65.5°C.

**CHEMICAL RESISTANCE**

The following list of laboratory tests is an indication of the range of chemical resistance. These tests consist of mild steel test panels coated to a film thickness of 12 to 15 mils/300 to 375 microns. The panels are one-half immersed in the solution for the noted time with no effect to the coating.

- Beer.....100°F/37.8°C 1 year
- Corn oil.....150°F/65.5°C 1 year
- Corn syrup, hi fructose.....150°F/65.5°C 1 year
- Ethyl alcohol 20%, in water.....150°F/65.5°C 6 months
- Ethyl alcohol 20%, in water,  
3.2 pH with citric acid.....150°F/65.5°C 6 months
- Gasoline, premium no-lead.....100°F/37.8°C 1 year
- Methyl ethyl ketone.....100°F/37.8°C 1 year
- Oil Prudhoe Bay sour crude.....210°F/99°C 1 year
- Sodium hydroxide 10%, in water...100°F/37.8°C 1 year
- Toluol.....100°F/37.8°C 1 year
- Vodka, 190 proof.....100°F/37.8°C 1 year
- Wine, 14% by vol. Alcohol.....100°F/37.8°C 1 year
- Wine, fortified, 20% alcohol.....100°F/37.8°C 1 year

Although the chemical tests indicated may show that PLASITE 9060 is unaffected by immersion as listed, it is not meant to imply an express guarantee in actual service. The service is dependent upon proper application and actual operating conditions and it is generally recommended that users confirm adaptability of the product for a specific use by their own tests.

PLASITE 9060 can also be used for more aggressive exposures (acids) for intermittent (splash or fume) use. Consult Carboline Technical Service for your specific needs.

**CURING**

Normally, polymerization and curing will take place in 5 days at 90°F/32.2°C and 7 days at 70°F/21°C. This coating should not be applied when air temperature or temperature of surface to be coated is below 50°F/10°C.

Within 24 hours after coating is applied, a minimum substrate temperature of 70°F/21°C is required for proper polymerization.

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# PLASITE® 9060 and 9060 HAR

In order to insure the complete removal of solvents and odor, force curing is generally recommended when coating is to be used in food related service.

Listed below are a few curing schedules that may be used for time and work planning. Prior to raising the metal to the force curing temperature, it is necessary that an air dry time of 2 to 5 hours at temperatures from 70/21°C to 100°F/37.8°C be allowed. After the air dry period has elapsed, the temperature should be raised approximately 30°F/18°C each 30 minutes until the desired force curing metal temperature is reached.

METAL TEMPERATURE	CURING TIME	METAL TEMPERATURE	CURING TIME
150°F/65.5°C	12 Hrs	200°F/93.3°C	6 Hrs
175°F/79.4°C	10 Hrs	225°F/107.2°C	4 Hrs

Final cure may be checked by exposing coated surface to MIBK for ten minutes. If no dissolving and only minor softening of film occurs, the curing can be considered complete. The film should reharder after exposure if cured.

## SURFACE PREPARATION

### Steel

#### High Temperature & Immersion Service

All sharp edges shall be ground to produce a radius and all imperfections, such as, skip welds, delaminations, scabs, slivers and slag shall be corrected prior to abrasive blasting.

Skip welds shall be welded solid.

Degrease surface prior to sandblasting. Organic solvents, alkaline solutions, steam, hot water with detergents or other systems that will completely remove dirt, oil, grease, etc. may be used. Prebaking of old tanks is recommended. Additional decontamination may also be necessary.

The surface shall be blasted to an SSPC-SP5/NACE No. 1 Joint Surface Preparation Standard blast grade using a Venturi blast nozzle supplied with 80 to 100 psi/5.5 to 6.9 bars. An anchor pattern or "tooth" in the metal shall correspond to approximately 20 to 25% of the total film thickness of the coating.

Contaminated grit shall not be used for the finish work.

The blasting media used shall be a natural abrasive, or steel grit, or slag grit (similar or equal to BLACK BEAUTY®). These abrasives shall be sharp with a hard cutting surface, properly graded, dry and of best quality. The media shall be of proper size to obtain the specified anchor pattern and shall be free of objectionable contaminants.

The anchor pattern shall be sharp and no evidence of a polished surface is allowed.

Remove all traces of grit and dust with a vacuum cleaner or by brushing. Care must be taken to avoid contaminating the surface with fingerprints or from detrimental material on the workers' clothes.

The surface temperature shall be maintained at a minimum of 5°F/3°C above the dew point to prevent oxidation of the surface. The coating shall be applied within the same day that the surface has been prepared. Visible oxidation or condensation is not allowed.

### Service in Corrosive Atmosphere

Degrease as described above.

Use SSPC/NACE Joint Surface3 Standards as noted below:

SSPC-SP10/NACE No. 2 (near white metal blast grade) - strong fumes and splash spill.

SSPC-SP6/NACE No. 3 (commercial blast grade) - chemical atmosphere and weathering.

SSPC-SP7/NACE No. 4 (brush-off blast cleaning) - chemical atmosphere and weathering.

SSPC-SP3 (power tool cleaning) - chemical atmosphere and weathering.

When utilized, inhibitive primer should be applied as soon as possible after surface preparation.

Surface preparation for chemical atmosphere and weathering must result in a relatively rough surface. If the steel is new and this type of surface preparation does not leave a reasonably rough surface on the steel, then the heavy film system is not recommended.

Depending on service conditions, film thickness requirements may be reduced. Contact Carboline Technical Service Department for further information.

### Concrete

Contact Carboline for a recommendation.

### Aluminum

Surface shall be clean and grease-free with a blast produced anchor pattern or "tooth" as described earlier under STEEL. In addition, the blasted surface shall be given a chemical treatment such as:

ALODINE 1200S available from Henkel Surface Tech

IRIDITE 14-2 produced by MacDermid Incorporated

OAKITE CRYSCOAT 747LTS and OAKITE CRYSCOAT ULTRASEAL

produced by Oakite Products

### For immersion, blasting with sharp grit followed by the chemical surface treatment is required.

Note: On metallic surfaces prepared only by chemical etching, the total coating film thickness applied should be restricted to only half the film normally applied to blasted surfaces. This reduced film thickness should be considered during selection of the coating for the service and the type of surface preparation performed.

### Wood, Transite and Similar Surfaces

Normally, these materials need no surface treatment provided they are dry and free of grease, oil and dirt. It is generally recommended that the first coat be diluted one part of recommended PLASITE Thinner #71 to one part of material and brush applied.

## APPLICATION

### Mixing

The curing agent and coating are supplied in separate containers at a 4:1 ratio. For splitting purposes, use 1 part curing agent to 4 parts coating by volume. Thoroughly mix coating, then add curing agent slowly and mix completely with coating. PLASITE Thinner #71 may be added before curing agent to extend pot life.

### Spray

All spray equipment should be thoroughly cleaned and the hose, in particular, should be free of old paint film and other contaminants.

Use standard production-type spray guns:

GUN	FLUID	AIR
DeVilbiss JGA-510	E	797
Binks #2001	66-SS	63-PB
Graco P800	04	02

When airless spray equipment is used, the recommended liquid pressure is 1500 to 1800 psi/103 to 124 bars with tip size from .017" to .021". Thinning requirements are more than for conventional spray.

Air supply shall be uncontaminated. Adjust air pressure to approximately 50 lbs./3.4 bars at the gun and provide 5 to 10 lbs./0.34 to 0.7 bars of pot pressure. Adjust spray gun first by opening liquid valve and then adjusting air valve to give an 8" to 12"/20 to 30.5 cm. wide spray pattern with best possible atomization.

Apply a "mist" bonding pass.

Allow to dry approximately one minute but not long enough to allow film to completely dry.

Apply crisscross multi-passes, moving gun at fairly rapid rate, maintaining a wet appearing film. Fast multi-passes may be applied until you have a film thickness of approximately 6 to 7 mils/150 to 175 microns (approximately 7 to 9 wet mils/175 to 225 microns). Repeat this procedure for the second coat to obtain a 12 to 15 mil DFT.

**Overcoat time will vary both with temperature and ventilation and will require from 10 to 12 hours at 70°F/21°C for enclosed spaces. Less time is required for exteriors. Remove all overspray by dry brushing or scraping if required.**

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# PLASITE® 9060 and 9060 HAR

Equipment must be thoroughly cleaned immediately after use with Plasite thinner to prevent the setting of the coating.

**Note:** Prior to application, stripe brush all welds, attachments and surface irregularities using PLASITE 9060 thinned a minimum of 50% by volume of PLASITE Thinner #71.

## Brush

Recommended for small areas and repairs only. Use a high quality brush, and apply a very light crisscross brush coat. Allow to dry for approximately 5 minutes. Then apply a heavy coat using a crisscross brush pattern. "Flow" the coating or rather than try to "brush out." Allow to dry tack-free. Repeat until sufficient film thickness is obtained. Normally, a film thickness of 2.5 to 3 mils/63 to 75 microns can be obtained per coat by this method.

## INSPECTION

Degree of surface preparation shall conform to appropriate specification as outlined in SURFACE PREPARATION section. Film thickness of each coat and total dry film thickness of coating system shall be determined with a nondestructive magnetic gauge properly calibrated.

Refer to Plasite Bulletin PA-3 for inspection requirements.

## SAFETY READ THIS NOTICE SAFETY AND MISCELLANEOUS EQUIPMENT

For tank lining work or enclosed spaces, it is recommended that the operator provide himself with clean coveralls and rubber soled shoes and observe good personal hygiene. Certain personnel may be sensitive to various types of resins which may cause dermatitis.

**THE SOLVENT IN THIS COATING IS FLAMMABLE AND CARE AS DEMANDED BY GOOD PRACTICE, OSHA, STATE AND LOCAL SAFETY CODES, ETC. MUST BE FOLLOWED CLOSELY.** Keep away from heat, sparks and open flame and use necessary safety equipment, such as, air mask, explosion-proof electrical equipment, non-sparking tools and ladders, etc. Avoid contact with skin and breathing of vapor or spray mist. When working in tanks, rooms and other enclosed spaces, adequate ventilation must be provided. Refer to Plasite Bulletin PA-3. Keep out of the reach of children.

**CAUTION** - Read and follow all caution statements on this product data sheet, material safety data sheet and container label for this product.

This data sheet provides standard information on the coating and application procedure. Since varying conditions may not be covered, consult with your local sales representative or Carboline Technical Service Department for further information.



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