

**SIGMAZINC 158 HS**  
(formerly Sigma Silicate MC)

**7558US**

November 2007  
Revision of January 2003

**DESCRIPTION** Sigma Zinc 158 HS is a two package moisture cured inorganic zinc primer based on an alkyl silicate binder.

**PRINCIPAL CHARACTERISTICS**

- Must be cured at an R.H. of at least 40%.
- Excellent corrosion resistance properties.
- Good low temperature curing.
- Must not be exposed to alkaline (>pH 9) or acidic (<pH 5) liquids.
- Can withstand substrate temperatures ranging from -130°F (-90°C) to 750°F (400°C), under normal atmospheric conditions.
- Good impact resistance and abrasion resistance.
- Can be used as a system primer under most paint systems based on unsaponifiable binders.
- No mud cracking below 5 mils (125 µm).

**COLORS AND GLOSS** Greenish Grey – flat.

**BASIC DATA AT 68° F (20°C)** (data for mixed product cured at 50% RH)

Mass density	approximately 21.0 lbs/gal (2.5 kg/ltr)
Solids content	approximately 73% (wet/dry method)
VOC (by EPA method 24)	3.2 lbs/gal (384 g/ltr)
Recommended dry film thickness	average 3 mils (75 µm), minimum 2.5 mils (60 µm) on smooth non-pitted blasted steel. Average 4 mils (100 µm), minimum 3 mils (75 µm) on rough or pitted blasted steel.
Theoretical spreading rate	1,171 ft <sup>2</sup> /gal at 1 mil (28.7 m <sup>2</sup> /ltr at 25 µm)
Touch dry after	30 minutes
Overcoating interval	minimum 24 hours (see additional data) maximum unlimited, zinc salts must be removed.
Full cure after	24 hours*
Temperature resistance	(dry) 750°F (400°C)
Shelf life (cool and dry place)	binder: at least 9 months Pigment: at least 24 months (store pigment moisture free)
Flash point	binder: 59°F (15°C) pigment: 150°F (65°C)
Packaging data	<u>5 gallon mixed kit</u> binder: 3.91 gals pigment: 63.7 lbs. (1.09 gallons)

(11/07)

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**RECOMMENDED SUBSTRATE  
CONDITIONS AND  
TEMPERATURES**

- Steel, cast iron, galvanized steel. Remove oil and grease deposits. Remove any zinc salts formed on galvanized steel. For atmospheric exposure service, the minimum blast cleaning standard is NACE No.2/SSPC-SP10 (Near White Metal Blast). Weathered galvanized steel should be roughened (cleaned) by sweep blasting.
- Blasting profile (RZ) 2-3 mils (50-75µm) is recommended.

**INSTRUCTIONS FOR USE**

Ratio: binder to powder 40 : 60 by weight

- Add powder to binder slowly while stirring constantly using a mechanical mixer. Adjust viscosity with thinner #90-53 to sprayable consistency. Then strain through a 30 - 60 mesh screen. Maintain stirring during application with a mechanical agitator.

Induction time                      None

Pot life                                      12 hours at 68°F (20°C) avoid moisture contamination

***AIRLESS SPRAY***

Recommended thinner                      90 – 53 (Flash point 80°F (27°C)).  
Volume of thinner                              0 – 10%

Manufacturer	<u>Graco</u>	<u>Binks</u>	<u>DeVilbiss</u>
Gun Model	205-591	Model 500	JGN-501
Pump	Bulldog	Mercury 5C	QFA-519

Hose should be 3/8" I.D. minimum, but a 1/4" I.D. whip end section may be used for ease of application. A maximum length of 100 ft. is suggested. Best results will be obtained using a .019 - .023 tip at 2100 – 2400 p.s.i. Keep material agitated while spraying.

***AIR SPRAY***

Recommended thinner                      90 – 53 (Flash point 80°F (27°C)).  
Volume of thinner                              0 – 10%

Manufacturer	<u>DeVilbiss</u>	<u>Binks</u>
Gun Model	MBC or JGA	#18 or #62
Tip – air cap combination	704E	66PE

Fluid hose should be 3/8" I.D. with a maximum length of 50 ft. Pot should always have dual regulation and preferably be kept at same elevation as spray gun. Material should be kept agitated during spraying.

(11/07)

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**BRUSH/ROLLER (for touch-up only)**

Recommended thinner            90 – 53 (Flash point 80°F (27°C)).  
Volume of thinner                0 – 5%

**CLEANING SOLVENT**            90-53 (Flash point 86°F (30°C))

**Note:** Nylon or Teflon packings are available from pump manufacturer and are highly recommended.  
**Note:** Other equipment may be suitable. Contact the Sigma Technical Service Department for recommendations.

**SAFETY PRECAUTIONS**

This product is offered for sale and use only to PROFESSIONALLY TRAINED INDUSTRIAL PERSONNEL. It is NOT FOR RESIDENTIAL USE. This product contains flammable solvents and/or other hazardous ingredients and must be used with caution. Observe all health and safety precautions as listed on the Material Safety Data Sheet during storage and handling, application, drying and disposal. DO NOT ATTEMPT TO USE THIS PRODUCT WITHOUT CONSULTING THE CURRENT “MATERIAL SAFETY DATA SHEET”. Material Safety Data Sheets are available from the Customer Service Department at SigmaKalon USA (713-355-3333)

**ADDITIONAL DATA**

Overcoating table

Substrate Temperature	32°F (0°C)	50°F (10°C)	68°F (20°C)	86°F (30°C)
Minimum Interval	48 hours	36 hours	24 hours	12 hours
Maximum Interval	Unlimited; provided that surface is free from contamination. Zinc salts must be removed completely.			

When Sigma Zinc 158 HS must be overcoated with organic topcoats, it is recommended to use a mist coat technique of the topcoat.

Curing table

substrate temperature		curing time
°F	°C	
86	30	12 hours
68	20	24 hours
50	10	36 hours
32	0	48 hours

Sigma Zinc 158 HS is a moisture curing zinc silicate, this means that it only cures after sufficient take up of water (from the atmosphere or immersion) during and after application; it is recommended that relative humidity and temperature are measured during the curing time. Relative humidity during curing is recommended to be above 50%.

(11/07)

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## Pot life

32°F (0°C)	24 hours
50°F (10°C)	16 hours
68°F (20°C)	12 hours
86°F (30°C)	6 hours

These figures are valid for quantities of approximately 1 gallon.

**Worldwide availability**

While it is the aim of Sigma Coatings to supply the same product on a worldwide basis, slight local modifications can be necessary to comply with legislation or special circumstances. In such situations an alternative product data sheet is published.

**Limitation of Liability** - The information in this data sheet is based upon laboratory tests we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the products made by Sigma Coatings, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge are reliable. The products and information are designed for users having the requisite knowledge and industrial skills and it is the end-user's responsibility to determine the suitability of the product for its intended use.

Sigma Coatings has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Sigma Coatings does therefore not accept any liability arising from loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The data contained herein are liable to modification as a result of practical experience and continuous product development.

This data sheet replaces and annuls all previous issues and it is therefore the user's responsibility to ensure that this sheet is current prior to using the product.

(11/07)