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DESCRIPTION

Henkel Corporation's shoe dip formulations are thermosetting, synthetic resin based solutions. These primers dry fast and cure to form hard, non-tacky, heat and abrasion resistant surfaces. These dips are primarily used to protect brake shoes from corrosion.

Through many years of service to the brake bonding industry, TEROSON SB A602B (known as TEROSON A602B) shoe dip has established a record of proven performance in protecting brake shoes from rust and improving the adhesion of lining segments to brake shoes. TEROSON SB A602B (known as TEROSON A602B) enhances the "flow", or surface wetting ability, of the adhesive. It is one of the most widely used shoe dips in the brake bonding industry.

TEROSON SB A602B (known as TEROSON A602B) is known by its translucent brown color.

FEATURES & BENEFITS

- Shipping in concentrate form for greater economy to the customer
- Improves "flow" or surface wetting ability of the adhesive used
- Proven protection against rust

USES

- Corrosion resistant, protective metal coating
- Brake shoe primer
- Tacking friction material adhesive
- Improving bond strengths of extra dense, hard to bond segment

TYPICAL PROPERTIES

Typical technical data and performance properties given for reference only (not for specification purposes)

Property	Typical Results
Polymer Base	Phenolic Resin
Total Solids (weight): (volume):	49 - 54% 40% (calculated)
Weight/Gallon:	8.47 lbs/gal (1.0 kg/L)

Property	Typical Results
Color:	Dark Brown
Solvent (thinner):	MEK, Isopropyl Alcohol
Coverage:	641ft ² /gal./mil (15.4 m ² /L/0.0254mm)
Viscosity:	Syrup
Shelf Life:	18 months from date of manufacture** **When stored under appropriate conditions (See STORAGE section)

APPLICATION METHOD

Surface Preparation: **Dip must be applied to clean surfaces.**

- For new or oily metals, clean by solvent or chemical degreasing.
- For old or previously bonded shoes, clean by "burning" shoes at a temperature between 725°F (385°C) and 750°F (399°C). Do not exceed 750°F (385°C) or the shoe may warp. This is also the temperature range recommended for de-bonding old shoes.
- If "burning" method is used, remove char by grit blasting, preferably using aluminum oxide #60. If aluminum grit is unavailable, a steel GRIT can be used. A grit blasting machine will produce a large volume of cleaned shoes at low cost. The shoe face (plate) can be cleaned manually by grinding; however, this method only cleans the bonding surface, not the entire shoe.

Note: All oils, dirt or other contaminants must be removed from surface before coating. When using grit-blasting equipment, be sure steel or aluminum oxide, rather than cast iron, grit is used. We do not recommend using round shot.

It is important that grit be free of oil and grease. To clean grit, tumble with sawdust. Periodic complete changing of grit is recommended. Do not add new grit to old because it will only become contaminated. When removing shoes from grit blasting machine, use oil free compressed air to blow off dust.

Operators should wear clean gloves when handling freshly blasted parts. This eliminates the possibility of oil from the hands being deposited on the shoe.

Application of Shoe Dip

- Follow cleaning with coating operation as quickly as possible to prevent corrosion.

- The most economical means of coating is by dipping. However, shoe dips can also be applied by brush or spray.
- Coat the entire shoe surface. Dip the shoe in such a manner that air pockets will not form to cause uncoated areas.

"Covering Power" of Shoe Dip

The amount of coating deposited on the brake shoes can be adjusted in two ways

- Varying the dilution ratio used
- Varying the speed of withdrawal of the shoes from the dip tank.

The covering power can, therefore, be varied to suit desired look. Optimal coating thickness can only be determined with actual parts.

Consider the following when determining acceptable coating thickness and appearance:

- The amount of dip deposited, at a constant rate of withdrawal from the tank, decreases as the dip is diluted.
- The faster the shoe is withdrawn from the tank, the heavier the deposit of shoe dip. The maximum deposit occurs when shoes drip excess dip after immersion.
- A slower withdrawal results in a thinner coat with less covering power. The chance of streaks and "overlaps" is also increased as withdrawal speed is decreased.
- Shoes should be withdrawn with even motion to eliminate "lines" or "overlaps".

If the shoes are removed slowly from the dip, a 1:3 dilution ratio will give the best coverage when using TEROSON SB A602B (known as TEROSON A602B). If the withdrawal rate is increased, a 1:4 dilution ratio will provide reduced "covering power". For best appearance, minimum dilution is recommended.

The amount of gloss is dependent on:

- Color of dip (product used)
- Diluent or diluents used
- Roughness of the shoe surface (smooth or grit-blasted)

Dilution with methyl ethyl ketone alone will provide the highest possible gloss finish. The use of isopropyl alcohol causes a less glossy finish to form.

The smoother the finish of the brake shoe, the higher the gloss. This difference will be noticeable in comparing old and new brake shoes after coating. Heavily pitted shoes (from grit blasting) cause diffusion of light, reducing or eliminating gloss.

How to Dilute TEROSON SB A602B (known as TEROSON A602B)

Dilute TEROSON SB A602B (known as TEROSON A602B) with either methyl ethyl ketone or isopropyl alcohol. The suggested dilution ratio is one part TEROSON SB A602B (known as

TEROSON A602B) to three parts diluent (minimum) or one part TEROSON SB A602B (known as TEROSON A602B) to four parts diluent (maximum).

Use a direct reading hydrometer having a scale range 0.800 to 0.900 with graduations of 0.001 per line. Insert the hydrometer into the tank at the time TEROSON SB A602B (known as TEROSON A602B) is added. Dilute TEROSON SB A602B (known as TEROSON A602B) until the hydrometer reading falls between the maximum-minimums given below.

Ratio TEROSON SB A602B to diluent	SPECIFIC GRAVITY at 77°F (25°C)	
	Methyl Ethyl Ketone	Isopropyl Alcohol
1:4 (MAXIMUM)	0.849	0.836
1:3 (MINIMUM)	0.861	0.846

Dip tanks must be evaluated periodically to ensure that the proper dilution is maintained. As diluent evaporates from the dip, a heavier coating than is necessary can be deposited if the diluent is not replaced. If hydrometer reading is low, add TEROSON SB A602B (known as TEROSON A602B); if reading is high, add diluent.

Drying Procedure

Allow adhesive to air dry for 10-20 minutes. Moderate heat, 160°-180°F (71°-82°C), can be used to reduce drying time if desired.

Proceed to Bond or Store

Proceed with bonding operation as described in TEROSON SB PL605 literature or place coated shoes in storage. When shoes are removed from storage, blow off accumulated dust with clean compressed air before bonding.

Note on Anvil Bonding

Brake shoes that have been coated with shoe dip, air dried and then inserted into an anvil bonding jig may stick. To avoid sticking, the coated shoe should be pre-cured. It is recommended that coated shoes be pre-baked at 400°F (204°C) for 20 minutes prior to use in an anvil bonding jig.

Dip Tank Maintenance

To achieve the best possible bonding results, the shoe dip tank must be kept clean. The best way to prevent contamination of the shoe dip is to only dip thoroughly cleaned shoes. However, even with care, dirt and metal particles will build up in the solution. This results in sludge formation in the bottom of the tank. This sludge should be drawn off periodically and disposed of accordingly.

How to Use Shoe Dip as Lining Primer

1. Remove any dust or dirt from lining by means of clean compressed air.
2. Apply diluted shoe dip to inner face (inside radius) by spray or brush.
3. Let coating air dry for at least 5-10 minutes before TEROSON SB PL605 (known as TEROSON PL605) adhesive is applied to lining.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$

CLEAN UP

Prior to cure, the dip can be removed with isopropyl alcohol, methyl ethyl ketone, or acetone. Follow proper solvent handling safety procedures.

STORAGE

These products, when stored in the liquid form, will meet the adhesion requirements of Henkel Corporation's specifications after 18 months of storage in the temperature range of 40°-60°F (4°-15°C). Storage of these products at temperatures above 60°F (15°C) may significantly reduce their working life.

Coated parts may be stored an additional 6 months at temperatures below 95°F (35°C) before bonding. Protect the adhesive surface from contamination during this storage period.

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