

GSB-88® Emulsified Sealer/Binder is a chemically engineered asphalt pavement sealer/binder comprised of a cationic emulsion of Gilsonite Ore, and specially selected plasticizers. This chemical colloid stabilized emulsion has been specifically formulated for sealing asphalt parking lots, city streets, county roads, airport taxiways, and airport parking aprons. GSB-88® provides a durable, yet flexible top coat, while special plasticizers and oils penetrate and rejuvenate asphalt pavements. The result is an emulsified sealer/binder that restores vital components to asphalt pavements lost during the aging and oxidation process. The gilsonite seal provides a long wearing anti-oxidative seal for the surface of the asphalt pavement. GSB-88® beautifies asphalt pavements by drying to an absolute black color.

GSB-88® is available in either a concentrate or ready to use form. The concentrate form allows large shipments via tank truck or railroad tank car. The concentrate form must be diluted with water prior to application.

Specifications for GSB-88® Concentrate are as follows:

Saybolt Viscosity at 77°F (25°C) ASTM D-244.	20 to 100 seconds
Residue by Distillation, or Evaporation.	57% min.
Sieve test ASTM D-244 (two tenths of one %)	0.2%
5 day Settlement test ASTM D-244.	5.0% max.
Particle charge (1) ASTM D-244	Positive

Specifications for GSB-88® Ready-to-Apply:

Saybolt Viscosity at 77°F (25°C) ASTM D-244	10 to 50 sec.
Residue by Distillation, or Evaporation.	28% to 42%
Pumping Stability test (2).	Pass

Tests on Residue from Distillation, or Evaporation:

Viscosity astm 275°F (135°C) ASTM D-4402	1750 cts max.
Solubility in 1,1,1 trichloroethylene ASTM D-2042	97.5% min.
Penetration ASTM D-5	50 dmm max.
Asphaltenes ASTM D-2007.	15% min.
Saturates ASTM D-2007.	15% max.
Polar Compounds ASTM D-2007	25% min.
Aromatics ASTM D-2007	15% min.

- (1) pH may be used in lieu of the particle charge test which is sometimes inconclusive in slow setting, bituminous emulsions.
- (2) Pumping stability is tested by pumping 1 pint, (475 ml) of GSB-88® diluted 1 part concentrate to 1 part water, at 77°F (25°C), through a 1/4inch gear pump operating 1750 rpm for 10 minutes with no significant separation or coagulation.

GSB-88® may be stored and handled like any standard asphalt emulsion. Vertical storage tanks are recommended. The storage tank should be equipped with a slow revolution mechanical agitator. Hot water heating coils, or electrical coils, or electrical heaters are required in colder climates to prevent the emulsion from freezing. Positive displacement gear pumps should be used to transfer and apply GSB-88® materials. Storage and handling temperature are 50°F (10°C) to 160°F (71° C). GSB-88® should be protected from

freezing, or whenever outside temperature drops below 40°F (4°C) for prolonged time periods.

Equipment:

GSB-88® may be applied with standard bituminous distributors. The equipment must be in good working order, and contain no contaminants or diluents in the tank. Spreader bar tips must be clean, free of burrs, and adjusted for regulated flow. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process. The equipment should be tested under pressure for leaks and to insure it is in working order before use. No special mixing equipment is necessary since GSB-88® concentrate may be easily diluted in the spreader tank.

Dilution:

GSB-88® Concentrate must be diluted with heated water prior to application to asphalt pavements. Always add water to the concentrate emulsion, never add concentrate emulsion to the water. Two dilution rates are recommended as follows:

2 parts GSB-88® to 1 part water for use on hills where run off may be of concern, or on very rough surface texture pavements.

1 part GSB-88® to 1 part water for most applications is recommended.

Rate of Spread:

Rate of spread is normally determined by the texture, porosity, and age of the asphalt pavement to be sealed. Application rate can vary from 0.08 to 0.15 gallons per square yard. For 2:1 dilution 0.08 to 0.12 gallons per square yard is recommended. For 1: 1 dilution 0.10 to 0.15 gallons per square yard is recommended. Exceeding recommended application rates is not recommended without consulting with a responsible manufacturer's representative.

Cure Time:

Under normal conditions, cure time for GSB-88® is 2 to 8 hours. Sheltered or shady areas may require longer cure times.

Application Precautions:

GSB-88® should not be applied to wet or damp pavement surfaces. Do not apply during rainy or damp weather, or when rain is anticipated within 8 hours after application is completed. Pavement surface temperatures should be 65°F (18°C) and rising before application of GSB-88® is initiated. At least three hours of daylight should remain after completion of the application. Material temperature will be applied at 130°F or above, but not to exceed 160°F during application. GSB-88® should not be applied on extremely windy days. Consult the Material Safety Data Sheet for GSB-88® fire and explosion data, health hazard data, first aid procedures, reactivity data, spill or leak procedures, waste disposal and use of personal protective equipment. Additional copies of the Material Safety Data Sheet can be obtained by calling ASI, toll free, at 1-800-972-2757.

Preparation of Pavement Surfaces:

Repair and patch all major pavement defects. All cracks, other than hairline cracks, should be filled with a suitable bituminous crackfiller. Scrape all oil spots to remove excess oil and dirt. Just before applying GSB-88® clean the asphalt surface of all loose dust, dirt, and other debris.

Addition of other materials:

GSB-88® has been chemically engineered to provide a premium asphalt sealer without the requirement of other materials or additives. Asphalt Systems, Inc., assumes no responsibility for problems resulting from mixing additives or other materials with GSB-88®.

Latex Addition:

Various synthetic and rubber latex additives may be used with GSB-88® at varying quantities. Consult Asphalt System's Technical Representative for specific details.

Sanding:

Sanding should be done at the same time GSB-88® is applied. A hard, highly fractured sand should be used. Because there are regional differences in sand characteristics, a knowledgeable local pavement maintenance engineer should be consulted to insure that the appropriate amount and type of sand is chosen to regain any lost skid resistance. Sanding is best done by mounting a sand slinger on the applicator and applying approximately 0.20 to 0.50 pounds of sand per square yard (typical application) or more if necessary during the spreading process.

Clean up:

GSB-88® that has not dried may be cleaned up with water. Dried GSB-88® may be removed with degreasing solvents. GSB-88® should be removed from skin using industrial hand cleaners and skin creams.

Availability and Cost:

For further information on availability and cost of GSB-88® contact Asphalt Systems, Inc., P.O. Box 25511, Salt Lake City, UT 84125-0511 or call toll free at 1-800-972-2757 or fax us at 801-972-6433.

Maintenance:

Under normal wear and tear, a single application of GSB-88® properly applied, should not require reapplication for 3 to 5 years. Reapplications should be at the recommended rates. Regular preventative maintenance can extend the life of pavement indefinitely.

Warranty and Disclaimer:

Asphalt Systems, Inc. warrants GSB-88® with respect to the quality stated herein. However, since the use of the product is beyond our control, our liability for damages shall in no case exceed the purchase price from Asphalt Systems, Inc., for the quantity of material consumed.

All products shipped shall meet or exceed the applicable specifications. Asphalt Systems, Inc., shall not be responsible for material after it has been stored in customer's tanks or for contamination from unclean trucks and shipping containers.

Asphalt Systems, Inc., will assume no responsibility or liability for improper applications, skid resistance changes, thickening in storage, or any other conditions beyond our control. This section sets forth the exclusive remedy for claims based on defects in or nonconformity of the product whether the claim is in contract, warranty, tort (including negligence) or otherwise. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL, WRITTEN, EXPRESS, IMPLIED OR STATUTORY, NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

ASI shall not be liable for any special consequential, incidental, indirect or auxiliary damages, including, without limitation, loss of profits or revenues, loss of use of products or

any associated equipment, cost of capital, cost of substitute goods, facilities, services, downtime costs or claims of the purchasers customers for such damage. ASI's sole liability, and any liability of ASI's suppliers, arising from the manufacture, sale, resale, use or application of the product shall not exceed the purchase price from ASI for the quantity of the product consumed.