

## CATIONIC BITUMEN EMULSION

### Prime Coat MC – 30

MC-30 is a medium curing type of liquid petroleum product produced by fluxing penetration grade bitumen with suitable diluents or cutters.

#### USES & APPLICATION

MC-30 is commonly used in the road construction as a prime coat of the road base prior to placing of the bituminous layer. It is suitable for use in the construction & maintenance of pavement as designated in ASTM D 2399. Its purpose is to bind the granular material of the road base to the bituminous layer and is used for priming newly constructed, crushed stone - or natural gravel base coarses prior to surfacing using truck mounted spray equipment.

#### PROPERTIES

MC 30 is blended to a low viscosity to ensure that it penetrates the top 10 mm of the base with the aid of the diluents or cutter, whilst depositing a thin film of bitumen on the surface to provide adhesion between the base coarse and the new surfacing.

#### DIRECTIONS FOR USE

- Although MC 30 is pump able at ambient temperature, heating of the binder is recommended prior to spray applications.
- Special care must be taken whilst heating, as MC 30 contains flammable cutters which have a flash point of  $\geq 38^{\circ}\text{C}$ .
- Before priming, the surface of the base course should be well swept.
- The moisture content of the base course should be less than 50% of the Optimum Moisture Content.
- If the base is very dry, dampen slightly with water to prevent the formation of “fish eyes”.
- Apply with a calibrated distributor at a binder spray temperature of  $55^{\circ}\text{C}$  and a minimum road surface temperature of  $10^{\circ}\text{C}$  and rising.
- Drying time is dependent on the porosity of the base course as well as on the prevailing weather conditions. The prime must be allowed to dry before opening to traffic or proceeding with the construction of the surfacing.

## COVERAGE

Priming is accomplished by spraying 0.45 – 1.75 liters/m<sup>2</sup>, the exact rate depends on the porosity of the prepared soil surface.

## COMPLYING SPECIFICATION

Medium Curing cut back asphalt complies with ASTM D 2027-97 (Re approved in 2004) & AASHTO M 82

## PACKING & SUPPLY

Bulk through Road Tankers, Steel drums and cans.

## STORAGE & APPLICATION

- Store in dry and shaded area in original packing.
- The container should be kept covered while working in order to prevent the evaporation of diluents or cutters.

## CLEANING

Tools may be cleaned with water as long as the product is wet. Once dry, by mechanical means only.

## TECHNICAL SERVICES

Technical assistance and information are available by calling Mena Energy or Sustainable Road Solutions on specific application.

Typical Properties				
Characteristics	Test Method	Unit	Min	Max
Kinematic Viscosity at 60°C	ASTM D 2170	mm <sup>2</sup> /s	30	60
Flash Point – Tag Open Cup	ASTM D 3143	°C	38	-
Distillation Test	ASTM D402	-	-	-
Distillate %V of total distillate to 360°C	-	-	-	-
To 225 °C	-	%	-	25
to 260°C	-	%	40	70
To 316 °C	-	%	75	93
Residue from Distillation to 360°C, % volume by difference	ASTM D402	%	50	-
Tests on Residue from Distillation				
Absolute Viscosity at 60°C	ASTM D5	Pa. S*	30	120
Solubility in Trichloroethylene	ASTM D 2042	%	99	-
Ductility at 25°C, 5 cm /min	ASTM D 113	cm	100	-
Water Content	ASTM D 95	%		

## HEALTH & SAFETY

Cutback bitumen products are flammable, hence must be protected from the source of ignition. It is advised to use adequate Personal Protection Equipment during, handling and application. Avoid contact with skin, eyes and clothing Avoid breathing vapor, spray or mists .Do not breath fumes, which may accumulate in the vapor headspace of containers Keep product in well-ventilated storage tanks. Keep away from sources of ignition. Prevent ingress of water.

LEGAL NOTES: MENA ENERGY reserves the right to change or modify the data without prior notice. All reasonable care has been taken in compiling the data that to the best of our knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with MENA ENERGY recommendations is accurate and true. All recommendations are made in good faith. No responsibility can be accepted by us and no warranty is implied with regards to any recommendations made in this data sheet, since the conditions of actual use, method of application and the labour involved are beyond our control.

## Cutback Bitumen

### Prime Coat MC – 70

MC-70 is a liquid petroleum product produced by fluxing penetration grade bitumen with suitable petroleum diluents. It is a medium curing cutback asphalt consisting of penetration grade asphalt cement and diluent or cutter of medium volatility. The diluent temporarily reduces the viscosity of the asphalt cement for ease of handling and application. After application the diluent evaporates, leaving the asphalt cement to perform its function.

#### USES & APPLICATION

MC 70 is suitable for use in the construction and maintenance of pavement as designated in ASTM D2399. MC70 is commonly used in the road construction industry as a prime coat of the road base prior to placing of the bituminous layer. Its purpose is to bind the granular material of the road base to the bituminous layer.

#### COMPLIANCE SPECIFICATION

Medium curing cut back asphalt complies with ASTM D2027 and AASHTO M82.

#### DIRECTION FOR USE

1. Heating of MC 70 is required for spray application.
2. Special care must be taken whilst heating, as MC 70 contains flammable cutters which have a flash point of  $\geq 38^{\circ}\text{C}$ .
3. Before priming, the surface of the base course should be well swept.
4. The moisture content of the base course should be less than 50% of the Optimum Moisture Content.
5. If the base is very dry, dampen slightly with water to prevent the formation of “fish eyes”.
6. Apply with a calibrated distributor at a minimum binder spray temperature of  $55^{\circ}\text{C}$  and road surface temperature of  $10^{\circ}\text{C}$  and rising.
7. Drying time is dependent on the porosity of the base course as well as on the prevailing weather conditions. The prime must be allowed to dry before opening to traffic or proceeding with the construction of the surfacing.

#### PACKING

In Road Tankers, Steel drums and cans.

## COVERAGE

Priming is accomplished by spraying 0.45 to 1.75 liters/m<sup>2</sup>, the exact rate depends on the porosity of the prepared soil surface.

## STORAGE AND APPLICATION

- Keep drums in a cool, well-ventilated place.
- Keep away from the source of ignition.
- Prevent ingress of water.
- Storage Temperature ambient to 60°C. Application Temperature 30°C to 80°C.
- Usual application is by spray using a distributor.

Typical Properties				
Characteristics	Test Method	Unit	Min	Max
Kinematic Viscosity at 60 <sup>o</sup> C	ASTM D 2170	mm <sup>2</sup> /s	79	140
Flash Point – Tag Open Cup	ASTM D 3143	°C	38	
Water content	ASTM D95	%	-	
Distillation test	ASTM D 402			
Distillate %V of total distillate up to 360 <sup>o</sup> C	-	-	-	-
to 225 <sup>o</sup> C	-	%		20
to 260 <sup>o</sup> C	-	%	20	60
to 316 <sup>o</sup> C	-	%	65	90
Residue from Distillation to 360 <sup>o</sup> C	ASTM D 402	%	55	
Tests on Residue from Distillation	-	-	-	
Absolute Viscosity at 60 <sup>o</sup> C	ASTM D2171	Pas	30	120
Solubility in Trichloroethylene	ASTM D2042	%	99	
Ductility at 25 <sup>o</sup> C, 5 cm /min	ASTM D 113	Cm	100	

## HEALTH & SAFETY

Cutback bitumen products are flammable, hence must be protected from the source of ignition. It is advised to use adequate Personal Protection Equipment during, handling and application. Avoid contact with skin, eyes and clothing Avoid breathing vapor, spray or mists .Do not breath fumes, which may accumulate in the vapor headspace of containers Keep product in well-ventilated storage tanks. Keep away from sources of ignition. Prevent ingress of water.

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**SLOW SETTING BITUMEN EMULSION  
BITUMENA SS-1H (TACK COAT)**

BITUMENA SS-1h is an anionic asphalt emulsion which is recommended for use as an adhesion promoter (tack-coat) between the two layers of asphaltic concrete used in road construction.

**USES**

BITUMENA SS-1h is recommended for use as tack coat between the two layers of asphaltic concrete in road construction.

**STANDARD COMPLIANCE**

The product complies with the specification as per **ASTM D 977** and **AASHTO M140**

**APPLICATION**

For large projects, BITUMENA SS-1h is usually sprayed directly from the road tanker. The nozzle size and speed of the tanker movement determines the rate of spray. Usually the speed is adjusted in such a way that the spray rate remains between 0.3 – 0.6 Kg/m<sup>2</sup>. The spray rate depends upon type of asphalt pavement

**DILUTION**

Generally, the product is recommended for spray with dilution with equal quantity of potable water as per the project requirement or as recommended and accepted by the consultant. The water to be added to emulsion and not vice – versa.

**PACKING**

Bulk & 200 Kg. Drum.

**STORAGE/SHELF LIFE**

Store under normal warehouse conditions. Shelf life of the product is 12 months from the date of manufacturing provided it is stored in unopened factory packed drums.

**CLEANING**

Tools may be cleaned with water as long as the product is wet. Once dry, by mechanical means only.

**TECHNICAL SERVICES**

Technical assistance and information is available by calling MENA ENERGY DMCC on specific application.

**RECOMMENDED TEMPERATURES**

TEMPERATURES	MIN	MAX
STORAGE	10°C	60°C
APPLICATION	10°C	55°C

**HEALTH AND SAFETY**

Use normal safety precautions. Wear rubber hand gloves, safety shoes and safety goggles while using and handling the product. Avoid contact with skin and eyes. In case of accidental contact with eyes, wash with plenty of water and seek medical treatment immediately.

### SLOW SETTING BITUMEN EMULSION

#### BITUMENA SS-1H

TYPICAL PROPERTIES				
CHARACTERISTICS	TEST METHOD	Unit	MIN	MAX
Saybolt Furol Viscosity @ 25°C	ASTM D 88	Sec	20	100
Storage Stability Test, 24 hours	ASTM D 6930	%	-	1
Cement Mixing Test	ASTM D 6935	%	-	2
Sieve Test	ASTM D6933	%	-	0.1
Residue by Distillation	ASTM D 6997	%	57	
Test on residue from Distillation				
Penetration @ 25°C (100gm) 5 sec.	ASTM D 5	dmm	40	90
Ductility @ 25°C 5 cm/min	ASTM D 113	cm	40	
Solubility in Trichloroethylene	ASTM D 2042	%	97.5	

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