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AUSTRALIA
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Eraspray ES81A HB

HIGH BUILD SOLVENT BASED SPRAY ELASTOMER

TECHNICAL DATASHEET

Eraspray ES81A HB is a premium grade, high performance solvented polyurethane spray elastomer. It is characterised by a high solids content of 70% and possesses a high build rate achieved by the incorporation of a unique liquid thixotrope. **Eraspray ES81A HB** can be applied 3-4 times thicker than conventional solvented spray elastomers without cracking.

Additionally it offers:

1. Rapid build up capacity without solvent entrapment and sagging.
2. Excellent abrasion resistance.
3. Corrosion protection.
4. Bonds to any substrate when the appropriate surface preparation and recommended primers are used.
5. Remains flexible and is therefore very suitable to handling expansion and contraction of metal associated with climate change or equipment that is subject to movement.
6. Application with standard airless spray equipment.

Eraspray is based on **PTMEG**. This polyol backbone results in an excellent combination of abrasion and chemical resistance. Therefore typical applications include lining of flotation cells, hoppers, launders truck bodies etc.

Product Specification

	Part A	Part B	Part C
Colour	Light Amber	Dark Wine	Water Clear
Solid Content (%)	100	20	100
Flash Point (°C)	>200	-5	220

Processing Characteristics

Eraspray is supplied in pre-weighed kits. It is packaged, in such a way that the three components can be mixed together in the Part A pail. Should smaller quantities be desired for mixing, and then the following ratio should be used. Quantities should be **weighed** accurately.

Part A	(pbw)	100
Part B	(pbw)	60
Part C	(pbw)	1
Pot Life at 20°C	(mins)	80

NOTE: PART A may solidify in cold weather into a wax like substance. If this happens, the entire contents should be melted by heating up to 50-60°C. This can be done simply by placing the pail in a suitable oven set at the required temperature. Once completely melted the Part A will remain liquid for 2-3 days.

NOTE: PART B must be completely stirred before use.

Physical Properties

Properties presented below are to be used as a guide and not intended for specification purposes.

MIXED

Solid Content	(%)	74
Colour		Light Amber
Mixed Viscosity, Initial	(cps)	12,000
Mixed Viscosity, After 30 mins	(cps)	20,000
Mixed Viscosity, After 50 mins	(cps)	35,000
Density	(g/cm^3)	1.05
Theoretical Coverage		16 kg kit will cover 11 m^2 at 1 mm thick; over spray losses will reduce this up to 20%

CURED ELASTOMER

		CAST	SPRAYED	TEST METHOD
Hardness	(Shore A)	80	75	AS1683.15
Tensile Strength	(MPa / psi)	30 (4350)	11 (1595)	AS1683.11
Elongation	(%)	350	280	AS1683.11
DIN Abrasion Resistance 10N	(mm^3)	-	55 – 85	AS1683.21
Compression Set / 22 hr at 70°C	(%)	-	45	AS1683.13
Cured Specific Gravity	(g/cm^3)	1.10	0.95	AS1683.4
Operating Temp	(°C)	-	-50 to 60	

Mixing

The Eraspray is supplied in a pre-weighed kit. The entire contents of the Part B can should be poured into the Part A can. This mixture should be mechanically (i.e. drill) mixed for 2-3 minutes. Then add the bottle of Part C, mix for a further 1-minute.

At this time the side and bottom of the pail should be manually mixed with a flat spatula.

Note: The amount of Part C addition is largely application dependant. Most operators use only ½ of the contents unless there are primarily vertical surfaces, where you may use the whole amount of the Part C. It is recommended to use ½ of the Part C initially and increase this as necessary.

Total mixing time should take no more than 3-4 minutes for a 16 kg kit.

Pot Life

The reaction sequence begins when the part B is added to the Part A. The Part C is not a catalyst; it purely acts as a thixotrope.

At 20°C the system is designed to have a pot life of 80 minutes.

The pot life is reduced to approximately 60 minutes at 30°C.

Higher temperatures will obviously reduce this pot life further.

Generally in hot weather, the entire system will have to be flushed eg. With MEK, every 4 hours.

Application Procedure

PRIMER

For application to metal we recommend the use of **AD-6** primer (see separate data sheet).
AIRLESS SPRAY EQUIPMENT is recommended for spraying **ES81A HB**.

- For successful atomisation a line pressure of 2000 - 3000 psi is recommended.
- The pressure must not drop below this figure because a poor surface finish will result.
- Gun tip orifices generally range from 0.010 - 0.040 inches. As a general starting point use an "18 thou" tip. This gives good atomisation and a flow through rate that the operator can control.
- Larger sizes of 40 though, means that the material may be being applied too quickly resulting in a poor finish.
- Generally the gun should be held at minimum distance of 15 inches. If the gun is too close pressure waves will occur.
- An even, steady hand is required to achieve a smooth finish.

- Even though the Eraspray **ES81A HB** is designed to be a high build coating it should not be sprayed thicker than 3mm because "mud cracks" will occur during the curing process. These cracks often will not be evident until the next day.

RE-COATING

It is not necessary to prime in between successive coats of **ES81A-HB** provided the surface has not been allowed to cure.
If the coating has been allowed to stand for more than 12 hours then the surface should be washed down with clean methyl ethyl ketone (**MEK**) solvent and primed with **AD-6**.

Re-coating times are related to temperature, the following can be used as a guide:

Coating Thickness	10°C	30°C
1 mm	1 hour	1 hour
2 mm	2 hour	1 hour
3 mm	3 hour	1 hour

Overspray and Curing

It is difficult to generalise as to how much over spray to allow for. For coating purposes a figure of 20% should be allowed for. Experience has shown that 10% over spray appears to be a minimum and for difficult work this figure can increase to 40%.

Eraspray ES81A HB is designed as a room temperature cure material. This means that it will achieve sufficient green strength after 16-24 hours. Full cure will be achieved after 5 days at the same temperature.

Knowing this a decision has then to be made as to when the job can be put back into service eg. For light duty application the 16-hour ambient cure may be enough. For severe applications at least 3 days should be allowed especially if the temperature drops greatly overnight.

If necessary warming the entire job to 50 - 60°C will speed up the cure dramatically.

Equipment

Suitable equipment brands includes	DEVILBISS
	IWATA
	WAGNER
	KREMLIN

The requirements of equipment are	Airless Spray
	Capability of pressure between 2000 – 3000 psi
	Delivery rate of 4 – 5 litres
	Tip sizes of 0.01 – 0.04 inch

Safety and Handling Considerations

ES81A HB contains inflammable solvents in the Part B component, the flash point of which is -5°C. Parts A & C contain no solvents and are non-flammable. When mixed ready for spraying, the resultant mixture should be treated as an inflammable solution.

Spraying equipment should be of suitable spark proof construction.

It is extremely important that the spray machine is connected to the work before spraying commences to prevent possible build up of static charge between the gun and the substrate.

Spraying should preferably be carried out in front of a water-spray booth or outdoors under cover. If spraying is to be carried out inside a building or in a confined space such as a tank, an explosion proof exhaust fan should be provided to reduce build up of inflammable vapours.

Areas where spraying is to be carried out should be kept away from flame or spark producing activities such as welding, grinding, wire bushing etc.

NO SMOKING should be allowed in or near the sprayed area it is inevitable that inflammable solvents will be present.

Personal protection for those involved in spraying the material should involve long sleeve overalls, rubber gloves, safety goggles, cotton spray hood and either mask or a full face air mask for use in confined areas. Those involved in the mixing operation should wear cartridge type respirator if working with large quantities of kits. Goggles must always be worn for the protection against splashes. An eye wash bottle should be close at hand should an accident occur.

Shelf Life

ES81A HB Part A must be protected from water and any form of moisture. In an open container, the Part A component will react with moisture to form a hard skin of cured urethane. The air space in the Part A can is filled with dry Nitrogen during manufacture to prevent premature skinning.

It is recommended the **ES81A HB** is stored at constant temperatures of between 20-25°C.

If stored in the original unopened container, the Part A should have a shelf life of 12 months. Part B does contain flammable solvents and should be stored in a cool, hazard free environment.