FreiLacke

Technical Data Sheet

EFDEDUR

HighSolid-Coating
UR1991

- HighSolid top coat with solvent
- High sagging limit
- Good application characteristics
- For industrial goods and all kinds of construction machines

Technical physical data	**Resin/ binder**		polyacrylic resin to be hardened with isocyanate
	Colour	**UR1991G =**	acc. to RAL 841 GL
		UR1991H =	acc. to RAL 840 HR
		UR1991Z =	acc. to customer´s requirement
	Gloss value DIN 67530 and DIN EN ISO 2813	**UR1991G =**	high gloss 70 to 90 geometry 20° (or > 90 geometry 60°
		UR1991H =	satin mat 35 to 55 geometry 60°
		UR1991Z =	acc. to customer´s requirement
	Original viscosity DIN 53211* without hardener		35 to 55 Sek. / 4 mm cup
	Mixing ratio (by weight)	**UR1991G =**	5 : 1
		UR1991H =	10 : 1
		UR1991Z =	acc. to customer´s requirement
	Mixing ratio (by Volume parts)	**UR1991G =**	3,7 : 1
		UR1991H =	7,4 : 1
		UR1991Z =	acc. to customer´s requirement
	Hardener base		EFDEDUR-HighSolid-Hardener HU0090 polyisocyanate
	Potlife after hardener addition Only the quantity of UR1991 is to be mixed with HU0090, which can be applied within the respective time.		max. 5 h / 20° At higher temperatures the pot life will be reduced: max. 4 h / 25°C max 3 h / 30°C
	Thinner		EFD-Thinner 400450 EFD-Thinner 400500
	Density after hardener addition calculated		1,3 / ml + / - 0,05
	Solid content after hardener addition calculated		69 % + / - 2
	Solid content in volume after hardener addition calculated		415 ml / kg + / - 10

Our technical data sheets are to advise you according to our latest state of knowledge. This information does not release you from own tests of our products in view to the ability for the intended procedures and applications. The sale of our products is an accordance with our terms of business and delivery.

DIN EN ISO 9001
ISO/TS 16949
EMAS

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Consumption calculated after hardener addition in original viscosity, without application loss	90 to 100 g / m² dry film thickness 40 µm see „Special remarks”
Spreading rate calculated after hardener addition, in original viscosity, without application loss	10 to 11 m² / kg dry film thickness 40 µm see „Special remarks“

Storability

Approx. 12 month in original packings at an ambient temperature of 5 to 25 °C, in case the original packings are tightly closed. Opened packing must be used very shortly. The minimum storage stability of each batch is mentioned on the product label. A storage time beyond the mentioned date doesn´t necessarily mean that the material is unusable. In this case a check of the qualities which are important for the respective.

Processing and application

Application

Due to the low viskosity, the high solid content and the high density UR1991 tends to seddling. Before hardener addition UR1991 has to be stirred carefully with a high-speed mixer.

Components are to be mixed homogeneously (e.g. with high-speed mixer).
To reduce the thixothropie a machinal stirring (high speed mixer) is reconnended

spraying-airmix: in original viscosity after hardener addition
nozzle: 0,33 mm or 0,13 inch geometry 40°
spraying pressure: 80 to 120 bar

spraying-airless: in original viscosity after hardener addition
nozzle: 0,33 mm or 0,13 inch geometry 40°
spraying pressure: 150 bar

spraying-high pressure: after hardener addition and viscosity adjustment to 25 to 35 sec.
nozzle: 1,5 to 1,8 mm spraying pressure: 5 bar

When using pneumatic spraying application „UR1991“ can be thinned with approx. 5 % thinner after hardener addition in order to achive good levelling

spraying-electrostatic: in original viscosity after hardener addition
by roller/ brush: in original viscosity after hardener addition

For roller and brush application add 0,3 to 0,5 % by weight EFD-deaeration agent 300807 in case of bubble creation.

Substrates

shot blasted steel, steel, cast iron, stainless steel, galvanized steel, aluminium

Due to different kinds of aluminium and zinc coatings we recommend preliminary adhesion test

Pretreatment

The substrate must be free of materials which prevent adhesion, e.g. oil, grease, dust and surfactant. According to the requirements we recommend to apply the suited chemical (e.g. phosphatizing, chromating) or / and mechanical (e.g. shot blasting) pretreatment.

Proposal for a coating system

subtrate:	steel (e.g. Bonderite 1000)	
primer:	FREOPOX-HighSolid-Primer	ER1980
top coat:	EFDEDUR-HighSolid-Coating	UR1991

Application temperature

required 18 to 24 °C

Drying air drying at 20°C

dust dry:	after 30 to 40 min.	(degree of drying 1/ DIN 53150)
dry to touch:	after 24 h	(degree of drying 4/ DIN 53150)
complete dry:	after 2 weeks	(swinging beam hardness/ ISO 1522)
dry to handle:	after 72 h	primer and top coat with 80 to 90 µm
oven drying:	to 80°C possible	(object temperature)

Other drying temperatures and other dry film thicknesses influence the drying time. Lower temperatures and higher film thicknesses will prolong the drying time.

Recoatability
With itself after previous cleaning, at any time possible

Cleaning of working equipment
EFD-Thinner 400500

Advise for safety protection and protection of health
The usual precautionery measures for ventilation as well as for personal protection are to be observed when handling painting materials. Detailled information about dangerous goods, sayfety data and recommendations concerning health protection and environment protection can be read in the corresponding safety data sheet.

Special remarks

Test condition

*Indication of the delivery viscosity according to DIN 53211:
DIN 53211 was withdrawn in October 1996.
On request the value is available according to DIN EN ISO 2431.

The statements concerning efficiency, drying and caution labelling depend on colour shade. The values mentioned in this data sheet are based on UR1991GO1148 in grey adjustment hardening with HU0090.

All information is based on a standard climate 20/65 DIN 50014.

For the calculation of the practical consumption loss additions have to be considered. Indications to this are the practical experience and advices given in DIN 53220.

All information are based on our product knowledge and experience. To the application we have no direct influence. For further information please don’t hesitate to contact us.

The information mentioned herein are reference values and are not given as specification.