
Type Water dispersible polyisocyanate based on hexamethylene diisocyanate

Features

- # Good film properties
 - # Good weather resistance
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Applications

- # Automotive OEM coatings
 - # Automotive refinishes
 - # Industrial coatings (ACE, Train etc)
 - # Plastic coatings
 - # Floor coatings
 - # Roof coatings
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Typical properties

Appearance	Colorless to slightly yellowish clear liquid
Non-volatile	100 wt%
Solvent	None
NCO content	17.4 wt%
Viscosity	2500 mPa · s at 25°C
Color value	< 1 (Gardner)
NCO equivalent weight	Approx. 241
Flash point	264 °C
Relative density	1.16(20 °C) (H2O = 1)

These values provide general information and are not part of the product specifications.

< Comparison >

Hardener	WT31-100 (Hydrophilic)	Conventional (Hydrophilic)
Viscosity mPa · s/25°C	2500	4500
NCO content %	17.4	16.6
NV %	100	100
Dispersibility for water	Good	Fair

1) Formulation for primary emulsion :

	Weight	Function	Supplier
< Part A >			
Setaqua 6520	638.0	Resin	Nuplex Resins
< Part B >			
Duranate™ WT31-100	163.0	Hardener	Asahi Kasei
< Part C >			
Demin. Water	199.0		
	1000.0		

-Polyol (Acrylic Polyol, Setaqua6515, N.V.;45%, supplier: Nuplex Resins,
OH: 3.2wt% (on resin))

- Non-volatiles : 45%
- NCO/OH : 1.25
- Mixing : 1000rpm/5min. (Labo-agitator with dispersion blade)
- Dry film thickness : 50µm
- Drying condition : 23°C /50%RH for 7days.

◆ Coating film performance & Pot life

	*1) Appearance	Hardness (König)	*2) Xylene resistance	*3) Water absorption	*4) Pot life
WT31-100	+	120	+++	6%	++
Conventional	+	70	+++	11%	++

*1) + ; Transparent, ~ ; Hazy

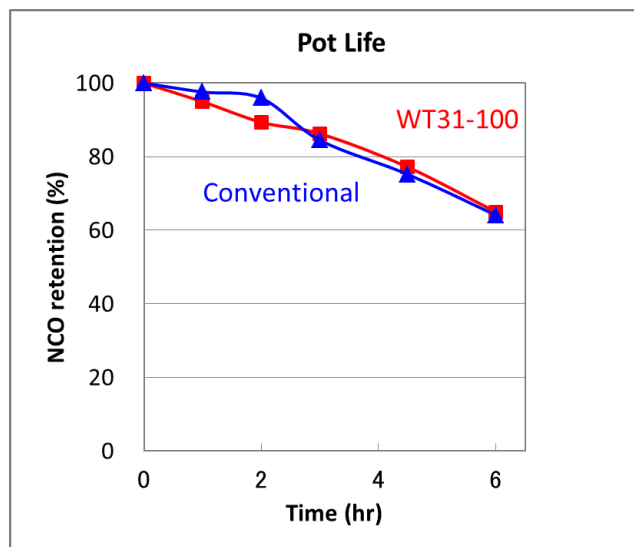
*2)*4) +++ ; Excellent, ++ ; Good, + ; Fair, ~ ; Bad

*3) Dip the films in water of 40°C for 1day.

Formulation with WT31-100 can provides good film properties.

◆ Pot life of Waterborne 2K-PU application

NCO retention(%) was measured by IR.



WT31-100 shows long pot life.

2) Formulation for secondary emulsion :

	Weight	Function	Supplier
<Part A>			
Setaqua 6510	613.8	Resin	Nuplex Resins
<Part B>			
Duranate™ WT31-100	192.2	Hardener	Asahi Kasei
<Part C>			
Demin. Water	194.0		
	1000.0		

-Polyol (Acrylic Polyol, Setaqua6510, N.V.;42% , supplier: Nuplex Resins,

OH: 4.2wt% (on resin))

- Non-volatiles : 45%
- NCO/OH : 1.25
- Mixing : 1000rpm/5min. (Labo-agitator with dispersion blade)
- Dry film thickness : 50µm
- Drying : 60°C 30min + 23°C /50%RH for 7days.

◆ Coating film performance & Pot life

	*1) Appearance	Hardness (König)	*2) Xylene resistance	*3) Water resistance	*4) Pot life
WT31-100	+	71	+++	+++	++
Conventional	+	38	++	~	~

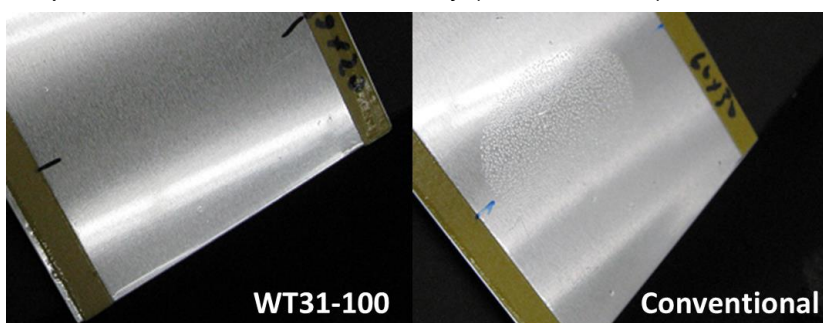
*1) + ; Transparent, ~ ; Hazy

*2)*3)*4) +++ ; Excellent, ++ ; Good, + ; Fair, ~ ; Bad

Formulation with WT31-100 can provides good film properties.

◆ Water resistance

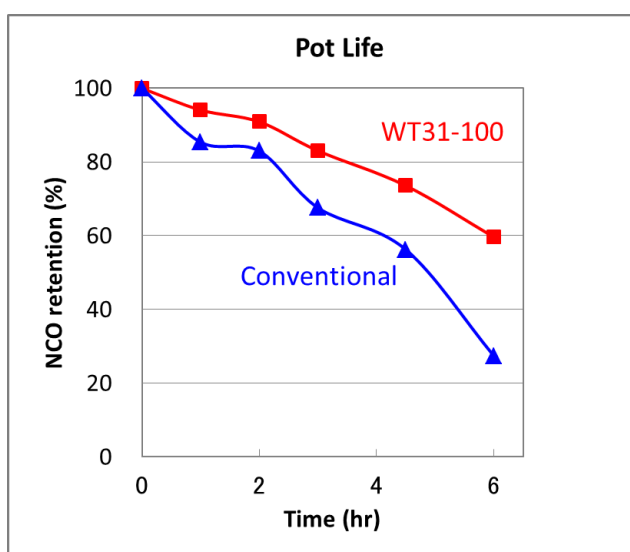
Droplet of water on the films for 1day (23°C /50%RH).



WT31-100 shows good water resistance.

◆ Pot life of Waterborne 2K-PU application

NCO retention (%) was measured by IR.



WT31-100 shows longer pot life than conventional water dispersible polyisocyanate.

All data and values in this data sheet show typical properties and characteristics only, obtained in our laboratory tests, and are not to be used as specifications.

For further information:

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