

ULTRITHANE 21

TECHNICAL DATA

PRODUCT DESCRIPTION	Glossy one-coat, acrylic-polyurethane, high build enamel for metals and alloys.	
👁️ FEATURES	The product is characterised by high gloss retention even if exposed to weathering.	
✓ RECOMMENDED USE	As top coat for metallic furniture finishing, chemical plants, window and door frames, agricultural machinery etc.	
🔧 PHYSICAL PROPERTIES	Colour	Tinting Service
	Viscosity	from 700 to 900 mPa.s (20°C) A 3 - V 20
	Specific Gravity	from 0,9 to 1,15 g/ml
	Gloss	from 85 to 95
	Solids content	% in weight 69 % in volume 60
	V.O.C.	g/l 353
☑️ SURFACE PREPARATION	METAL: GALVANIZED SHEET:	clean, dry, degreased, without rust and/or calamine. verify the perfect cleaning of the support and eliminate, through brushing, the white corrosion. If the galvanized sheet is new, perfectly degrease and pre-treat. Light Alloys: clean, dry, degreased; make a careful sandpapering to abrade the surface.
	As this is a finishing product, it does not have anti-corrosive properties; therefore, when applied on the exterior or where corrosion protection is required, it is mandatory the use of a suitable anti-corrosive primer.	
APPLICATION METHODS	Application by spray through air or airless is recommended.	
	Environmental conditions (°C and R.H.)	
	Application temperature:Support: 5°C - 35°C and always 3°C above the Dew Point Environment: Min 5°C - Max 35°C	
	Relative humidity: 60%	

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TECHNICAL DATA HARDENER PUR EXTRA Series 1223.

MIXING RATIO (A+B)	by weight:100 + 30 by volume: 77 + 23 4 Parts Ultrithane 21 1 Part PAF1223 Hardener	
SPECIFIC WEIGHT OF HARDENED PRODUCT (A+B)	1.23 g/ml	
SOLID CONTENT (A+B)	% by weight 62 % by volume 52	
V.O.C. (A+B)	g/l 437	
DILUTION	15-20% with our PSF005 Universal 2K Thinner	
VISCOSITY OF APPLICATION	20-22" Ford C 4	
POT LIFE	4 hours at 20°C	
WET FILM THICKNESS	60 microns diluted	
DRY FILM THICKNESS	40 microns	
COATS	1	
AIR DRYING	Drying temperature Dust free Out of touch Dry through Fully cured	Through air at 20°C from 20 to 30 minutes from 1 to 2 minutes from 24 to 36 minutes 14 days
OVERCOATING LAPSE	Min 4 hours - Max 96 hours	
TEMPERATURE RESISTANCE	80°C	
THEORETICAL AVERAGE SPREADING RATE (*)	11,3 sqm/Kg - 13 sqm/l	
THEORETICAL AVERAGE CONSUMPTION	88,3 g/sqm	
APPLICATIONS DETAILS	Conventional spray equipment: Gravity feed gun, Airless, Airmix, Mixed air, Underpressure.	

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PREPARATION OF THE SUPPORT

This section explains the pre-treatment processes of the surfaces before actual painting. Application on surfaces other than those shown is indirectly discouraged, except where approval for this is received from the technical department.

The process of cleaning/pre-treatment is very important in order to obtain excellent results from the painting cycles. The pre-treatment can be done in various ways and according to different criteria, which have a single result: the surfaces to be painted must be perfectly clean and dry, free from organic and/or inorganic contaminants, such as oil, grease, rust, calamine, oxides, soluble salts, dust, neutral pH.

Please find below the methods to use to prepare metal surfaces:

- Degreasing: done with solvents (or solvent vapours) or water-soluble cleansers, by hand or in automatic systems (tunnels or industrial washers). The aim is to dissolve and remove oil and grease.
- Manual and mechanical cleaning: removal of flakes of rust and oil paint, using tools (grinders, discs and abrasive papers, metal brushes, scrapers etc.), removed by hand or mechanically. As these processes do not remove greasy substances, they should be preceded and followed by degreasing as described above.

DEGREES OF MECHANICAL PREPARATION

- St2 removal by tapping, scraping, sanding and metal brushing of loose fish scale and foreign substances. At the end of the treatment, the surfaces take on an almost metallic appearance
- St3 treatment of the surface of steel, carried out as above, but more thoroughly. At the end, it has an outstandingly metallic appearance.

DEGREES OF PREPARATION BY SANDING (OR GRIT BLASTING OR SHOT PEENING)

- Sa1 Light sanding corresponding to a good brushing. All easily removable parts, rust or other foreign particles must be removed.
- Sa2 Thorough sanding, corresponding to commercial sanding. Fish scale, rust and foreign particles must be almost totally eliminated. After this operation, the surface looks grey.
- Sa2.5 - Very thorough sanding, corresponding to sanding metal until it is near white; like the above, this operation must leave the surface perfectly clean and any small impurities that still exist must look like minor variations of colour on the support. After this operation, the surface is near white in appearance.
- Sa3 white metal sanding must lead to obtaining a perfectly clean metal surface.

Consult the photographic references to the visual evaluation of the substrata before the painting process in accordance with ISO Standard 8501.

ENVIRONMENTAL CONDITIONS (°C & R.H.)

Application temperature: these are the limits of temperature of the support and the air in the environment within which application and subsequent drying take place. In general, the following are indicated:

Support:	between + 5°C and + 35°C and always 3°C above the Dew Point
Environment:	min + 5°C and max + 35°C
Relative humidity:	60%

The term Dew Point indicates the temperature at which (at specific percentages of R.H.), there is the formation of condensation, which can be deposited on metal surfaces (and on the film) in the form of condensation or even ice. According to a good rule, a painting product should be applied only at temperatures of at least 3°C above the Dew Point. Tables exist that help establish these values.

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INFORMATION ON APPLICATION AND RECOMMENDATIONS

Mixing ratio (A+B): Indicates the quantity of hardener necessary for correct polymerisation.

This is expressed:

in weight: 100 of pigmented part A + X of hardener

in volume: Y of pigmented part A+ X of hardener (total 100)

Important:

The ratio between the pigmented part (A) and hardener is not the same if calculated by weight or by volume. Therefore, in the case of ratio in weight, the use of scales is recommended, whereas if no weighing instruments are available, catalysis by volume (with graduated measuring jugs) must be used, scrupulously observing the ratio indicated by volume.

It is recommended to use ONLY the hardener shown in Technical Data Sheet.

Dilution:

This refers to the type of specific thinners required and the percentage of use. Incorrect use of thinners is often the cause of a number of problems, both during the phase of application and for the film of paint once dry.

E.g. The use of nitro thinners for application of polyurethane cycles can create phenomena of dimpling on the surface of the dried film; in addition, the presence of partially reactive thinners in a nitro diluents can give rise of unwanted reactions with the isocyanate component, thus reducing the aesthetic and mechanical characteristics of the system.

Furthermore, the choice of unsuitable thinners (regenerated ones) can cause problems of colour change, sedimentation of the diluted product, variations of glossiness and surface haziness.

Application viscosity:

The viscosity we recommend refers to average application at 20°C, therefore it may vary depending on the temperature and method of application used or on the conformation of the object to be painted.

Pot Life:

The useful life of the A+B mixture, i.e. the maximum time by which the bi-component product must be used. When this period has lapsed, the painting product, even though it may apparently still be used, loses its characteristics, compromising the final result. The value refers to 20°C, as the temperature has a considerable influence, reducing the pot life as it increases. Unless otherwise indicated, it is halved if the temperature rises by 10°C (reaching 30°C) and is doubled if the temperature drops by 10°C (therefore reaching 10°C).

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DRYING

This is the time necessary for the film of painting product to dry. The data shown in the product information are calculated at standard conditions of 20°C and a Relative Humidity of 60%; in actual fact, the data can also undergo variations depending on the climatic conditions and the thickness applied.

In the bi-component and oxidative products, with total polymerisation, reference is made to the time necessary for the chemical reaction between component A and component B (catalyst or oxygen) to take place in full. Before this time, the products look dry, but the characteristics of chemical and mechanical resistance are reached only when the polymerisation is complete.

The drying process, up to the phase shown as "Touch dry" mainly depends (as order of importance and of effective influence) on the degree of ventilation present in the environment, therefore on the ambient temperature, and lastly on the thickness applied per coat. In particular for the products with physical drying or by oxidation, the drying time also depends on the thicknesses applied, both total and for each coat. In general, a thickness that is double that indicated, takes four times as long as the time normally required for drying, with the same ventilation.

N.B. After drying, in general the reticulation/polymerisation is not total, but is completed gradually in the following days and even weeks. The painted article has nevertheless reached a sufficient degree of hardening that it can be handled, sanded, stacked, repainted, packaged, shipped and exposed to the exterior, but many of its characteristics may still undergo variations, such as the chemical resistances and hardness (which tend to increase) and the elasticity (which tends to decrease). Therefore, even accelerated tests of resistance (saline mist, wet strength, etc.) must be carried out (unless otherwise indicated) after a period of at least 3 weeks, during which the painted support must be kept in stable conditions of temperature and relative humidity, as described by Standard UNI EN ISO 12944-6 under point 5.4 (as defined in ISO 554).

Overcoating lapse: this means the minimum and maximum period to be able to repaint the product with the same paint or with other systems indicated. In the case of bi-component products, it is possible to overpaint beyond the maximum interval, by sanding and after checking the compatibility of the system of repainting.

N.B. all the values linked with the times of drying/polymerisation depend on the thicknesses applied and the environmental conditions where the painting and drying took place, up to total polymerisation. Those shown, if not otherwise indicated, refer to standard environmental conditions (20°C) and the recommended thicknesses.

Resistance to temperature: indicates the maximum temperature to which the dried film can be exposed without undergoing substantial alterations in performance. It must be remembered that most paints, when they are exposed to high temperatures, tend to change appearance, both at the level of the exact shade and glossiness. If the temperature stays constant (operating temperature) at levels close to the maximum temperature, there will still be a reduction in the resistances (accelerated ageing). The presence of humidity in a warm environment leads to a further loss of the characteristics of the paint, as do sudden changes of temperature: in conditions of a great temperature range, there is greater deterioration of the characteristics of the film. The temperatures shown refer to a ventilated environment; it is different for immersion in hot liquids for which, unless specifically indicated, the products are not suitable.

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