



TECHNICAL DATA SHEET



Name of the product:

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Characteristics :	Two-component polyurethane enamel.		
Description :	Water-soluble two-component polyurethane enamel intended for topcoat high gloss and chemical resistant coatings of metal parts and constructions.		
Contents (general) :	As a binder, the enamel contains dispersion as a component, consisting of functional hydroxyl groups, inorganic and organic pigments, fillers, coalescent agents, solvents and special additives, wetting and dispersion agents, defoamants, rheology modifiers and other admixtures. DENAPUR HARDENER contains a solution of aliphatic polyisocyanate in an environmental-friendly solvent.		
Use :	Topcoat high gloss coatings of steel, galvanized and aluminium constructions for demanding applications, with the requirement of high durability at high level of corrosive and chemical stress for both indoor and outdoor. Enamel is characterised by quick drying, increase in hardness and adhesion, mechanical, chemical and weather resistance. The product is mainly used for industrial applications in metal industry and mechanical engineering, and for coatings of technological units in chemical, food industry and in agriculture. This product can be further used also for coatings of means of transport, industrial washing machines, engines, transmissions, machine tools, machinery and it is also suitable for surface workings both in construction and renovation.		
Shades :	It is produced in shades according to the RAL sample book or in shades according to agreement with the producer.		
Properties :	Coating composition:	Hardener:	Hardened mixture:
Density (g/cm³) :	1.05 – 1.4	1.12	1.14 – 1.35
Dry matter volume ONL (%) :	30 - 45	77	38 - 50
Dry matter weight (%) :	40-55	80	45 - 62
Viscosity in KU :	60 - 100		
Efflux time F6 (s) :	10 - 50		
Efflux time F4 (s) :	> 60		25 - 60
pH value (at 20°C) :	7 - 9		7 - 9
VOC (volume of organic solvents) (kg/kg):	0.02 – 0.1	0.3	0.09 – 0.1
TOC (total volume of organic carbon) (kg/kg):	0.01 – 0.06	0.16	0.05 – 0.08
Highest value of VOC permissible (g/l):	140		
Max VOC content in the ready-to-use product (g/l):	138		
Category of water-borne coatings:	A/j multi-component reactive coating compositions with special function intended for specific purposes.		
Appearance/Color :	Liquid		
Gloss Number (at 60°) :	L60: 80-95		
Hardness test by pendulum (2H/80°C) :	5D: min 20		
Miscibility :	miscible with water		
Adhesiveness by cross-cut test :	grade 0 (edges of the cut are entirely smooth, undamaged)		
Drying period grade 1 (against dust) :	1h 30 min		
Drying period grade 2 (to the touch) :	2 h		
Drying period grade 4 (dried up) :	3 h		
Flammability/ Flash-point (°C):	> 75°C		
Chemical resistance:	resistant against: light acidic and alkaline agents, diesel oil, Savo (bleach), motor oil, hydrogen peroxide, xylene, butyl glycol.		

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Preparation of base coat :	Base coat based on iron has to be coated with a primary anticorrosive paint from DENAKOR, DENAPOX Z, EPOXIDEN Z, DENAPUR Z series or with a primary epoxy anticorrosive paint DENAS EPOXY Z 150. Other paints can be used after testing or after consulting the producer. On galvanized and aluminium constructions, it is possible to use DENAPUR paint and to apply it directly without an anticorrosive primary coating only after thorough cleaning and degreasing of the base coat.								
Conditions of application :	Air temperature and base coat temperature upon application and drying of the coating must not drop below +15°C. The workability of the hardened mixture is max 4 hours at 20°C. In case of a necessity of more coatings, the interval between the individual coatings is min 12 hours depending on drying conditions.								
Dilution :	Water; dilution of the paint is possible only after consulting the producer – max 20%								
Hardening :	<p>Prior to the application, DENAPUR is mixed with a hardener in the given weight ratio according to table:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">100 : 20</td> <td>DENAPUR TUŽIDLO 1 (soft)</td> </tr> <tr> <td>100 : 22,5</td> <td>DENAPUR TUŽIDLO 2 (middle)</td> </tr> <tr> <td>100 : 25</td> <td>DENAPUR TUŽIDLO 3 (hard)</td> </tr> <tr> <td>100 : 15</td> <td>DENAPUR TUŽIDLO DES</td> </tr> </table> <p>Mixing ratios of both components are determined by the producer according to type of application and requirements of the customer for final properties and resistance of the coating. The hardener is added to the colour always while mixing continuously. Suitable mixing device is used for mixing (e.g. a drill with a stirrer), it is necessary to mix it properly. After perfect mixing of both components, the mixture is left standing for 10 minutes and the consistency of the mixture is adjusted by adding 5 to 15 units of water according to required viscosity.</p>	100 : 20	DENAPUR TUŽIDLO 1 (soft)	100 : 22,5	DENAPUR TUŽIDLO 2 (middle)	100 : 25	DENAPUR TUŽIDLO 3 (hard)	100 : 15	DENAPUR TUŽIDLO DES
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Recommended method of application :	by paintbrush, paint roller or spraying – air, pneumatic, high-pressure – Airless, Airmix								
Recommended coating system :	<p>1 - 2 layers of EPOXIDEN Z (alternatively DENAPOX Z, DENAKOR), optimal coat thickness 80 µm DFT, interval for respraying in case of two layers is 24 h at 20°C – in case of additional drying at temperatures up to 80°C, the interval may be lowered to 2 hours min.</p> <p>1 - 2 layers of DENAPUR, two-component polyurethane enamel, optimal coat thickness 80 µm DFT, interval for spraying between the base coat and the enamel has to be at least 4 hours. In case of two enamel layers, the coating interval is 24 h at 20°C – in case of additional drying at up to 80°C, the interval can be lowered.</p> <p>It is possible to use acrylate paints of the DENAKOR series as primary anticorrosive paints.</p>								
Data for application :	<p>The paint may be additionally dried at temperatures between 50 - 80°C, at 60°C, enamel is dry in 1 h.</p> <p>The workability period of the hardened mixture is max 4 h.</p>								
Spreading rate and recommended thickness :	<p>Theoretical consumption is 0.05 – 0.10 kg/m² (2.00 – 3.90 m²/kg) at thickness between 30 - 60 µm MF</p> <p>Wet layer thickness: 90 - 180 µm MF</p> <p>Dry layer thickness: 40 - 80 µm SF, for undiluted varnish 15 µm SF, in case of dilution with 20 units of water 10 µm SF</p>								
Packaging :	Plastic or metal packages weighing 0.8 - 200 kg.								
Storing :	<p>Store the original and tightly closed package in cool, dry and well-aired spaces, at temperatures between +5 to +25 °C. Protect from frost. Store the mixture separately from beverages, food, animal food and medicine. Store out of reach of children.</p> <p>Storage life min 12 months since the production date. The product must not freeze.</p>								
Liquidation of packages and waste :	Liquidate product residue and dirty packages as dangerous waste in accordance with effective regulations.								



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Safety and hygiene :	Keep to the principles of personal hygiene. Secure ventilation of the workplace. Upon application by spraying, use protection of the respiratory organs. Upon staining of the skin, wash the affected place with water and soap. If product comes in contact with eyes, rinse them with a stream of water, seek medical treatment. Upon consumption, rinse mouth with water, do not induce vomiting. In case of health problems, seek medical treatment.
Legislature, certificates, attestations, other tested parameters :	See Declaration of conformity.