Material Data Sheet

DIAMANT dichtol

Metal Sealing & Impregnation Systems


spray


brush


dip


inject

Aluminium Automotive Component Treatment

The integrity of automotive castings was increased by dipping the components in a bath of **dichtol** ensuring maximum sealing characteristics even at high temperature and high pressure.

Product Description

dichtol is a liquid one component polymer system for any kind of alloy to impregnate micro pores and hairline cracks from nearly 0 to 0,5 mm without using vacuum or pressure. Its not water based composition makes it also usable for rapid prototyping, models, plaster, wood and cement. **dichtol** is developed to allow locally applicable impregnation without additional machines using the capillary effect by perfect chemical creeping properties. **dichtol** is ready to use, colourless and easy to apply either by spraying, brushing or dipping.

Properties

- one component, ready to use
- no vacuum, no pressure
- applicable by spraying, brushing or dipping
- temperature resistant up to 500 °C permanent
- pressure tested up to 500 bar
- surface dry after 5 minutes
- highly resistant against chemical attacks

Material Selection Criteria

The selection of the different versions of **dichtol** must be done by their specific working properties, pore sizes, temperature resistance and climatic conditions.

Shelf Life 12 month min. in closed containers, store cool and dry

Pack Sizes
1 Ltr.
5 Ltr.
10 Ltr.
200 Ltr.
complete Service-Box

Range

dichtol is available in the following versions:

Standard	pore sizes from nearly 0 up to 0,1 mm, heat resistant up to 200°C, silicone-free **#0210** **FL** (fluid) **#1379** **Spray** (500 ml spray can)
Macro	pore sizes from 0,1 up to 0,5 mm, heat resistant up to 200°C, silicone-free **#1307** **FL** (fluid)
WF	pore sizes from nearly 0 up to 0,1 mm, heat resistant up to 300°C **#1835** **FL** (fluid) **#1837** **Spray** (500 ml spray can)
WF Macro	pore sizes from 0,1 up to 0,5 mm, heat resistant up to 300°C **#1836** **FL** (fluid)
WFT	pore sizes from nearly 0 up to 0,1 mm, heat resistant up to 300°C, extended curing time especially for tropical climatic conditions **#1532** **FL** (fluid)
WFT Macro	pore sizes from 0.1 up to 0.5 mm, heat resistant up to 300°C, extended curing time especially for tropical climatic conditions **#1546** **FL** (fluid)
HTR	pore sizes from nearly 0 up to 0,1 mm, heat resistant up to 500°C after heat curing at 250°C for 3 hours **#0977** **FL** (fluid)
Hydro	pore sizes up to 0,5 mm, wall thickness < 5 mm, water based **#1524** **FL** (fluid)
Surface Cleaner	to remove the **dichtol** surface layer after the impregnation - except for Hydro and HTR **#1009** **FL** (fluid)
Thinner	silicone-free; to adjust the viscosity of the different **dichtol**-types **#1005** for Standard and Macro **#1006** for WF and WF Macro **#1285** for WFT and WFT Macro **#1307** for HTR

Technologiezentrum Wasser (TZW)
Karlsruhe
Prüfstelle Wasser
TZW

appoval for drinking water applications

German Lloyd

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Metal Sealing & Impregnation Systems

	Standard FL #0210	Standard Spray #1379	Macro FL #1307	WF FL #1835	WF Spray #1837	WF Macro FL #1836	WFT FL #1532	WFT Macro FL #1546	HTR FL #0977	Hydro FL #1524
Application dipping	X	-	X	X	-	X	X	X	X	X
brushing	X	-	X	X	-	X	X	X	X	X
injection	X	-	X	X	-	X	X	X	X	X
spray can	-	X	-	-	X	-	-	-	-	-
pump sprayer - spray chamber	X	-	-	X	-	-	X	-	-	X
Dipping Time	minutes		minutes	minutes		minutes	minutes	minutes	minutes	minutes
up to 5 mm wall thickness	4		6	4		4	4	6	10	10
5 - 10 mm	8		10	8		8	8	10	15	15
10 - 15 mm	13		15	13		13	13	15	20	20
> 15 mm	30		40	30		30	30	40	40	40
Surface Drying [minutes]	1	1	5	1	1	5	3	6	-	-
Surface Layer Thickness [µm]	3	3	10	4	4	10	3	8	4	20
Cure at 20 °C [hours] load	light (full)		light (full)	light (full)		light (full)	light (full)	light (full)	1 hour after dipping temper at 250°C for 3 hours	light (full)
up to 5 mm wall thickness	4 (24)		6 (24)	4 (24)		6 (24)	6 (24)	8 (24)		8 (24)
5 - 10 mm	8 (24)		12 (24)	8 (24)		10 (24)	10 (24)	12 (24)		14 (24)
10 - 15 mm	13 (48)		18 (48)	15 (48)		17 (48)	17 (48)	19 (48)		20 (48)
> 15 mm	24 (48)		24 (48)	24 (48)		24 (48)	248(48)	28 (48)		28 (48)
Technical Data										
Pore Sizes [mm]	0 - 0,1		0,1 - 0,5	0 - 0,1		0,1 - 0,5	0 - 0,1	0,1 - 0,5	0 - 0,1	0 - 0,5
Permanent Temp. Resistance [°C]	-40 to +200		-40 to +200	-40 to +300		-40 to +300	-40 to +300	-40 to +300	-40 to +500	-40 to +200
Temporary Temp. Resistance [°C]	-40 to +300		-40 to +300	-40 to +450		-40 to +450	-40 to +450	-40 to +450	-40 to +550	-40 to +300
Pressure Tested [bar]	up to 350		up to 300	up to 350		up to 300	up to 350	up to 300	up to 350	up to 150
Viscosity (DIN 4 cup, 23 °C) DIN 53211 (4 mm nozzle)	12		100	10		29	13	17	12	10

All material values are average values and vary due to mixing ratio, material quantity and environmental conditions. The mentioned material values are based on normal conditions (STP) of 20°C (273K / 31,73°F) and 1013mbar (1013hPa).

Preparation

Remove loose debris, grease and dirt from the pores with **DIAMANT cleaner**. The impregnation area has to be free of oil and water. In the case of oil soaked parts, wash the parts thoroughly with 100% acetone. If you have to impregnate wet parts, put them into an oven to vaporize the water. It is important to remove water, oil or other liquids from the parts before the impregnation material can be applied. Heated parts must be cooled down to max. 30°C.

Application

Dipping: Fill **dichtol** into a container with a tight closing cover. After the impregnation (dipping times please see technical data sheet) refill **dichtol** into its container (store tightly closed until the next application).

Brushing: Apply **dichtol** with a soft brush on the impregnation areas 4 times crosswise within approx. 1 minute.

Spraying: Spray **dichtol** 4 times crosswise within approx. 1 minute allowing **dichtol** to penetrate deeply inside the pores.

Injecting: Deep holes, threads, channels, tubes and chambers can easily be filled with **dichtol** by injection. After the impregnation refill **dichtol** into its container (store tightly closed until the next application).

Cure: **dichtol** cures chemically at room temperature within a few hours (approx 1 hour per mm wall thickness). The dipped parts are surface dry after approx. 5 minutes and can be stored or delivered.

Authorized DIAMANT - Partner

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