



Information on Deffolon Non-stick Coating Products

Product model: DF71156 black base coat/DF71156 clear color top coat

Customer name:

Product series: water-based PTFE two-coat coating

Product characteristics: It has good non-stick performance, adhesive force, hardness, chemical resistance, high-temperature and low-temperature resistance, abrasion resistance, coating with higher non-wettability and lower friction coefficient and simultaneously maintains the environmental protection and health characteristics of water-based coatings.

Application description: It is widely used in the high-temperature resistant coating, low-temperature resistant coating, non-stick coating, corrosion resistant coating, abrasion resistant coating, surface coating with low energy and low friction coefficient and also is the good coating selection of household products (mainly including kitchen supplies), industrial products and small household appliances.

Main products include non-stick pans, non-stick containers, non-stick base or base plate, rollers and roll shafts, sliding chutes, blades, etc.

Food contact certification: The coating has passed the tests of FDA, LFGB and RoHs.

Recommended service temperature for coating: The recommended service temperature for coating shall not exceed 260°C.

Main ingredients of coating (base coat):

Coating composition	PTFE resin
	FEP resin
	PAI resin
	Coloring pigment
	Filler
	Water-based solvent
	Surfactant

Main ingredients of coating (top coat):

Coating composition	PTFE resin
	Coloring pigment
	Pearl powder
	Water-based solvent
	Surfactant
	Cellulosic thickener



Coating performance parameters (base coat):

Parameters	Test methods	Standard range
Solid content	380℃×10min	35%±2
Viscosity	Use NK-2 cup ×25℃ (second)	35~40s
Theoretical spraying quantity	10µm film thickness	13m ²

Coating performance parameters (top coat):

Parameters	Test methods	Standard range
Solid content	380℃×10min	40%±2
Viscosity	Use NK-2 cup ×25℃ (second)	20~40s
Theoretical spraying quantity	10µm film thickness	13m ²

Coating performance parameters

Inspection items		Inspection methods	Standard range
Coating test	1	Base coat film thickness	Unit: µm 10~20u
	2	Top coat film thickness	Unit: µm 10~15u
	3	Gloss test	Use the light aluminum plate for spraying, gloss meter, 60-degree angle value. 20~30
	4	Surface conditions	Check whether there are pitted spots, slag spots, concave spots and leveling state. After drying, use the 10X magnifying glass to observe whether there are cracks. No abnormality
	5	Adhesive force test	Draw the 1mm×1mm cross-cut, use the 3M898 gummed paper to paste the test surface for leveling, rapidly pull the gummed paper away from the surface at an angle of 45°, and repeat it five times. No peeling-off
	6	Hardness test	Use the pencil hardness tester to increase 1KG load capacity, make Mitsubishi pencil and the tested surface form a 45° included angle, and carry out the frictional movement of 7mm~10mm more than three times. ≥1H



	7	Abrasion resistance test	Use the abrasion resistance tester to increase 3KG pressure, change the surface every 500 times for 3M744B7 scouring pad, carry out the periodic friction after smearing 5% detergent on the tested surface, and take a back and forth as one time with less than 10 lines.	>500 times
	8	MEK resistance test	Drip MEK on the tested surface to increase 1KG load capacity. The cotton cloth horizontally rubs the coating surface back and forth 50 times. Take a back and forth as one time.	No coating fading
	9	Salt water resistance test	5% salt/purified water, 95~100℃. Boil for 8 hours, preserve heat for 16 hours, and test 4 cycles.	No bubbles or spots on the coating surface
	10	Cooking test	Cooking rice>250 times	Wiping with a rag, no uncleanable rice crusts on the coating surface, no coating peeling-off

Coating application

Processing sequence	Technical indicators	Remarks
Substrates	aluminum coil, cast aluminum, anodized aluminum, stainless steel, cold-rolled steel, ceramics, etc.	These materials can form the whole substrate and also can only form the substrate surface in the case of composite materials.
Workpiece pre-treatment	Roughening treatment	<p>It is for giving the coating better adhesive force on the substrate. Main methods include sand blasting, acid pickling, grinding, etc. It is suggested that the roughness treatment standard of the substrate should be 5-10 microns.</p> <p>It is for giving the coating better adhesive force on the substrate.</p>

Coating pre-dispersion	Degreasing treatment	Main methods include alkali wash, introducing 380~400°C high-temperature furnace for thermal decomposition, etc.
	Dedusting treatment	It is for giving the coating better anti-chemical properties and better adhesive force on the substrate. Main methods are to use the high-pressure air (0.4~0.6Mps) for simple blowing.
	Prevent the secondary pollution	During the transfer of the substrate, the bare hands are not allowed to directly contact with the sprayed surface, and the non-cotton protective gloves shall be worn so as to prevent the surface from being polluted by cotton fiber. Pay attention to the oil stain on the gloves, and do not cause the secondary pollution.
	Dispersion in the form of rolling or stirring Container rotation number: 50~100rpm Container rotation time: <2 hours	The coating shall be stirred fully and uniformly before use and can be sprayed only after ensuring that they do not sink to the bottom. But the continuous spraying time shall not exceed 2 hours. The drastic stirring action shall be absolutely avoided so as to avoid the coating caking. It is strictly prohibited to use the stirring tool together with the oil-based coating so as to avoid the coating shrinkage. In order to remove the particles after drying the bucket lid during the coating transportation and storage,

<p>Coating filtration</p>	<p>Use the 150~250-mesh filter screen to filter the base coat Use the 100~150-mesh filter screen to filter the top coat</p>	<p>the filtration shall be first carried out to avoid blocking the spray gun.</p> <p>Preheating can help improve the wettability of base coat to avoid sagging and shrinkage.</p>
<p>Material preheating</p>	<p>The preheating temperature is controlled between 40°C and 50°C.</p>	<p>The insufficient base coat baking conditions will cause the phenomena of coating gloss reduction, slight yellow, rainbow and perforation.</p> <p>The base coat overbaking will cause the poor leveling of top coat and reduce the interlayer adhesive force.</p>
<p>Base coat spraying</p>	<p>Spray gun caliber: 1.3~1.5mmΦ Spraying pressure: 0.2~0.4MPa Spraying distance: 15~30cm Low-temperature baking: 120°C×5min Film thickness (after sintering): 10~20μ</p>	<p>The exhaust outlet of the low-temperature furnace shall be smooth, and otherwise the phenomena of coating film yellowing and rainbow will occur.</p> <p>The excessively high material temperature and poor leveling during the spraying of top coat will seriously affect the coating gloss.</p> <p>After the top coat is sprayed, the surface shall be in a wetting state before entering the furnace so as to ensure the high gloss.</p> <p>The excessively low high-temperature baking conditions will affect the coating film curing. The</p>



Cooling	The materials sprayed with base coat can be sprayed with top coat only after they are cooled to less than 40°C.	excessively high temperature (more than 400°C) will cause the coating decomposition so as to affect the coating appearance and reduce the service performance.
Top coat spraying	Spray gun caliber: 1.3~1.5mmΦ Spraying pressure: 0.2~0.4MPa Spraying distance: 15~30cm 380~400°C×10~15min Low-temperature baking: 380~400°C×10~15min Film thickness (after sintering): 8~15μ	The exhaust outlet of the high-temperature furnace shall be smooth, and otherwise the phenomena of coating film yellowing and rainbow will occur.

Other precautions of coating application:

1. Before painting, check whether there are moisture and dirt in the spray gun. If any, please timely clean them up.
2. Inspection of workbench and painting shed: keep the painting table and painting shed clean to ensure no dust and foreign matters so as to avoid splashing onto the spraying surface.
3. The rotary pressure of substrates shall not be too large so as to prevent the liquid coating film from being thrown off due to centrifugal force.
4. After spraying, place it into the furnace as soon as possible and do not make it stand in the air for a long time so as to prevent dust and foreign matters from falling on the spraying surface.
5. After the work is ended every day, the spray gun shall be cleaned. The cleaning of the work area includes the coating powder and other wastes in the painting shed.
6. The furnace interior shall be kept clean, and the sintering furnace shall be cleaned regularly so as to avoid the deposition of dust and foreign matters.
7. The coating storage temperature is 1~40°C. It is best to store the coating in the 25°C environment of avoiding direct sunlight. The static storage period is 6 months. When not in use for a long time, it is recommended to carry out the spraying once every three months. Pay attention to the principle of "first warehousing, first use".

Precautions during accidental treatment:

1. Avoid contact with skin during operation. In case of contact with skin, Wash the skin thoroughly with soap and water. If the pricking phenomenon occurs, immediately seek medical advice.
2. Wear protective glasses during operation. In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes and seek medical advice.



3. Try to keep adequate ventilation in the operation site, avoid inhaling steam, mist or droplets. If inhaled, immediately move to fresh air. In case of severe symptoms, give an artificial respiration or seek medical advice.
4. If accidentally swallowed, do not induce vomiting, seek medical advice immediately and show the name of material compositions.
5. The coating extinguishing methods and fire extinguishing agents are universal water-based film-forming foam, carbon dioxide and dry powder extinguishing agent.
6. Accidental release measures: use the Inert absorbent materials for blockage and elimination, and properly dispose wastes. If heating exceeds the flash temperature (generally more than 90°C), the fire source shall be eliminated.