DAIKIN | Positively Innovative

Anti-smudge coating

OPTOOL DAC-200

TECHNICAL DATASHEET

OPTOOL DAC-200 is an additive applicable to UV curable hard coatings. It imparts the excellent anti-fouling features, notably a distinctive anti-fingerprint property, with an abrasion resistance.

Introduction

UV curable hard coated surface with OPTOOL DAC-200 takes on the excellent features.

1. Anti-fingerprint and abrasion resistance
2. Excellent water and oil repellency
3. Low coefficient of friction
4. Low haze and high total light transmittance

Appearance and composition / component information:

Items		Numeric value
Appearance		Light yellow transparent liquid to White translucent liquid
Active ingredient		15.0~25.0 mass%
Solvent	Propylene glycol monomethyl ether acetate	40.0~50.0 mass%
	Methyl Ethyl Ketone	30.0~40.0 mass%

Solubility in general solvents:

Solvent		DAC-200	Conventional product DAC-100
Alcohol ether Ester ether	Propylene glycol monomethyl ether	Excellent	Good
	Propylene glycol monomethyl ether acetate	Excellent	Excellent
	Diethylene Glycol Ethyl Methyl Ether	Excellent	Good
Ketone	Methyl Ethyl Ketone	Excellent	Excellent
	Methyl Isobutyl Ketone	Excellent	Good
	Acetone	Excellent	Excellent
Ester	Ethyl acetate	Excellent	Good
	Butyl acetate	Good	Good
Alcohol	Ethyl alcohol	Bad	Bad
	Isopropyl alcohol	Bad	Bad
Aromatic	Toluene	Bad	Poor
Aliphatic	n-Hexane	Bad	Bad

Conditions: Dissolution test method: 1.0 g of additive and 4.0 g of general solvent were mixed well and the appearance was confirmed.

Excellent ：colorless and transparent solution
Good ：dissolved, but small particles remained on the wall.
Poor ：uniformly dispersed but slightly cloudy
Bad ：insoluble. light cloudiness, cloudiness, precipitation, etc.

Basic performance of coating film*1)

AF Additive		None		DAC-200		Conventional product DAC-100	
Hard Coating Agent	-	Type A	Type B	Type A	Type B	Type A	Type B
Water Contact angle(2μl)	°	63	66	117	114	115	116
Oil Contact angle *2) (2μl)	°	9.8	13.9	64.6	64.4	63.8	64.5
Coefficient of friction *3)	-	-	-	0.07	0.07	0.07	0.07
Haze *4)	%	0.33	0.64	0.98	0.75	1.09	0.89
Transmittance *4)	%	90.7	87.8	92.1	91.8	91.8	92.0
Pencil hardness *5)	-	2H	3H	3H	3H	3H	3H
SW durability (Scratch) *6)	Cycle	-	-	360	200	190	140
SW durability *7)	Cycle	-	-	10,000	8,000	2,000	2,000
Rubber durability *8)	Cycle	-	-	10,000	11,000	7,000	6,000
Chemical resistance *9)	Cycle	-	-	5,000	3,000	3,000	<3,000

*Typical properties are not suitable for specification purposes.

*1) Substrate film is PET. Amount of additive 0.5wt% coating thickness 4~5 μm.

*2) Oil is n-Hexadecane.

*3) Material: OA paper(20×20mm) Load: 1.69N(200gf) Test speed: 200 mm/min.

*4) Nippon Denshoku「Haze Meter NDH 7000SP」.

*5) ASTM D3363.

*6) Conditions: SW:#0000, Load 1.5kgf, Area 1 ㎠, stroke 40mm, speed 40rpm.

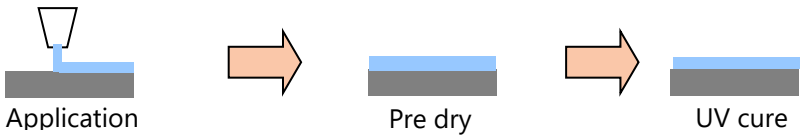
*7) Maximum rubbing cycles to keep water contact angle above 95 degrees.
Conditions: SW:#0000, Load 1kgf, Area 1 ㎠, stroke 40mm, speed 40rpm.

*8) Maximum rubbing cycles to keep water contact angle above 95 degrees.
Conditions: Rubber「MINOAN」, Load 1kgf, Area 0.6 ㎠, stroke 40mm, speed 50rpm.

*9) Maximum rubbing cycles to keep water contact angle above 95 degrees.
Conditions: Rubber「HWARANG」, Load 1kgf, Area 0.6 ㎠, stroke 40mm, speed 50rpm.

How to use;

Mix additive with hard coating agent in solid content ratio of 0.1～5%



Application: bar coating, dipping, spraying, spin coating, roll coating, etc

→ Pre dry: Dry at 60～110℃ for 2～15min.

→ UV cure: Dose 400～1200 mJ/cm^2 with Hg-lamp under N_2 atmosphere.

Handling / Safety information

- Be sure to read the notes on SDS and labels before use.
- This product is intended for general industry, and therefore its adequacy and safety as a raw material for medical purposes cannot be guaranteed.

Package size

- 500g

For more information, visit our website.

DAIKIN INDUSTRIES, LTD.

https://www.daikinchemicals.com/

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