

# ***DAITOSOL***

## I. What is DAITOSOL

Alkyl acrylate copolymer emulsion is the film former for mascara and eye liner, which is widely used in cosmetic field.

DAITOSOL 5000AD and DAITOSOL 5000SJ have been used for over 30 years.

## II. Advantage of DAITOSOL

DAITOSOL give the following unique properties for mascara and eye liner:

**(1) Flexible and Strong Film**

**(2) Long Lasting Glossy Thin Film**

**(3) Water Resistant Film**

DAITOSOL have been used over 30 years because of its high safety. Recently, DAITOSOL are used for not only mascara and eye liner, but also for the skin care and body care product for its very flexible film.

## III. Low Level of Residual Monomer of DAITOSOL

For more and more concern about residual monomer for alkyl acrylate copolymer, we guarantee the following level for our DAITOSOL.

Spec Value	DAITOSOL 5000AD	DAITOSOL 5000SJ
Residual Monomer	Less than 40ppm (As Ethyl acrylate)	Less than 80ppm (As n-Butyl acrylate)
Ref. JCIC Spec.	Less than 1.5%	Less than 1.5%

## IV. INCI Name

<DAITOSOL 5000AD>

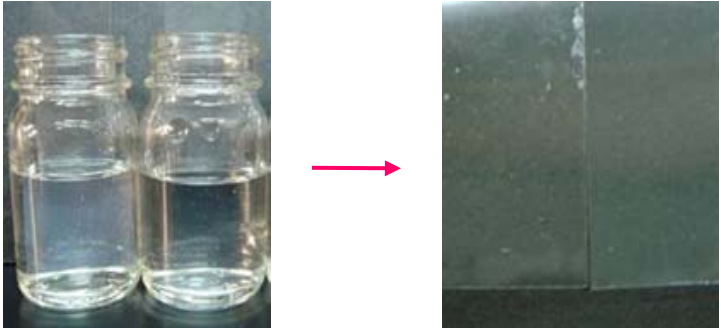
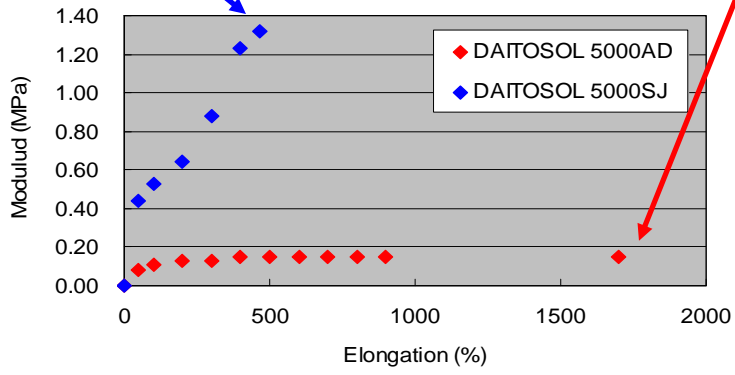
ACRYLATES COPOLYMER

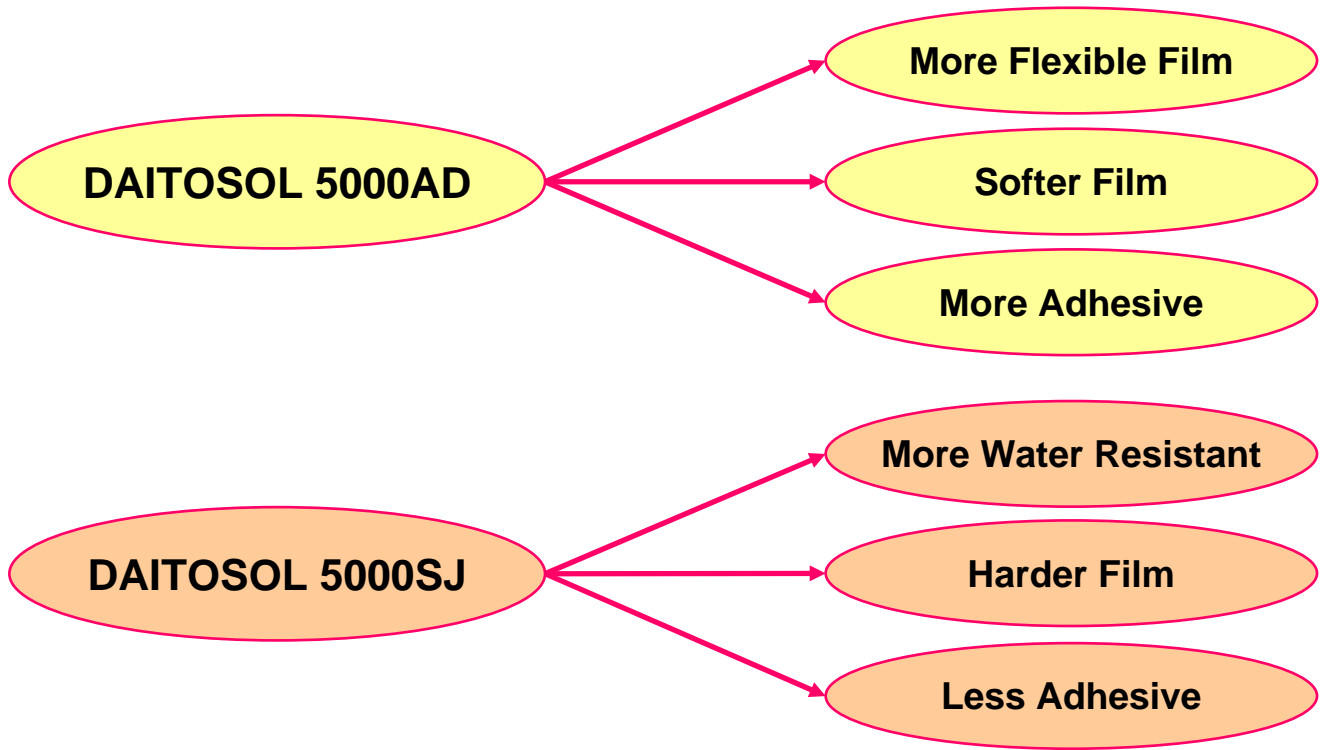
100%

<DAITOSOL 5000SJ>

ACRYLATES/ETHYLHEXYL ACRYLATE COPOLYMER

100%

Items	DAITOSOL 5000AD	DAITOSOL 5000SJ																																										
INCI Name	Acrylates copolymer	Acrylates/ethylhexyl acrylate copolymer																																										
pH	5.5~7.5	2.0~5.0																																										
Solid Content (%)	50.0																																											
Appearance of DAITOSOL/ Appearance of the Film After Drying	Milky White Emulsion/ Transparent Glossy Film																																											
Adhesiveness of the Film	5000AD > 5000SJ																																											
<p><b>Water Resistancy</b></p> <p>Applied on the PET film by applicator (film thickness: 0.1mm), dried for 1 hour, put in water for 5 minutes, and took film out of water</p>	 <p>5000AD &lt; 5000SJ</p> <p>Get transparent</p>																																											
<p><b>Mechanical properties (Stress-Strain Curve)</b></p> <p>Refer to JIS K6301</p> <p>Adjusted to 30% of solid content with de-ionized water, applied on the Teflon plate (film thickness:1mm), dried at room temperature for 30 minutes and 3days at 40 degree C.</p> <p>Elongated at 500mm/min.</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid blue; padding: 5px;"> <p>Broken Elongation(%): 465</p> <p>Broken Modulus (MPa): 1.32</p> </div> <div style="border: 1px solid red; padding: 5px;"> <p>Broken Elongation(%): 1700</p> <p>Broken Modulus (MPa): 0.15</p> </div> </div>  <table border="1"> <caption>Stress-Strain Data Points</caption> <thead> <tr> <th>Elongation (%)</th> <th>Modulus (MPa) - DAITOSOL 5000AD</th> <th>Modulus (MPa) - DAITOSOL 5000SJ</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.00</td><td>0.00</td></tr> <tr><td>~50</td><td>~0.10</td><td>~0.45</td></tr> <tr><td>~100</td><td>~0.12</td><td>~0.55</td></tr> <tr><td>~200</td><td>~0.15</td><td>~0.65</td></tr> <tr><td>~300</td><td>~0.18</td><td>~0.85</td></tr> <tr><td>~400</td><td>~0.20</td><td>~1.25</td></tr> <tr><td>~465</td><td>~0.20</td><td>~1.32</td></tr> <tr><td>~500</td><td>~0.20</td><td>~1.35</td></tr> <tr><td>~600</td><td>~0.20</td><td>~1.38</td></tr> <tr><td>~700</td><td>~0.20</td><td>~1.40</td></tr> <tr><td>~800</td><td>~0.20</td><td>~1.40</td></tr> <tr><td>~900</td><td>~0.20</td><td>~1.40</td></tr> <tr><td>~1700</td><td>~0.15</td><td>~1.40</td></tr> </tbody> </table>		Elongation (%)	Modulus (MPa) - DAITOSOL 5000AD	Modulus (MPa) - DAITOSOL 5000SJ	0	0.00	0.00	~50	~0.10	~0.45	~100	~0.12	~0.55	~200	~0.15	~0.65	~300	~0.18	~0.85	~400	~0.20	~1.25	~465	~0.20	~1.32	~500	~0.20	~1.35	~600	~0.20	~1.38	~700	~0.20	~1.40	~800	~0.20	~1.40	~900	~0.20	~1.40	~1700	~0.15	~1.40
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**As Film former**

**MASCARA&EYE LINER**      **LIQUID STOCKING**      **SUN SCREEN**



**For Peeling**

**PEELING MOUSSE**      **PEELING CREAM**

**For Lifting**

**LIFTING GEL**

Under Coat for Mascara Volume-up Mascara		Product Name	(%)	(%)
			DM-0003-AD	DM-0004-AD
A	Carnauba		5.00	5.00
A	Beeswax		8.20	8.20
A	Stearic acid	LUNAC S-98	1.80	1.80
A	Glyceryl stearate SE	RHEODOL MS165V	1.80	1.80
A	Propylene glycol stearate	HOMOTEX PS-200	1.80	1.80
A	Oleic acid		0.90	0.90
A	Polyisobutene		1.80	1.80
A	Cyclomethicone	KF-995	3.60	3.60
A	Propylparaben		0.10	0.10
B	BLACK BL-100		-	10.00
C	De-ionized water		34.37	34.37
C	1,3-Butylene glycol		1.80	1.80
C	PVP	LUVISKOL K30	1.80	1.80
C	THICKAGENT LC (Xanthan gum, Hectorite, Celulose)		0.10	0.10
C	Triethanolamine		1.60	1.60
C	Methylparaben		0.18	0.18
C	Ethylparaben		0.15	0.15
D	DAITOSOL 5000AD		30.00	20.00
E	NFW-6D-2		5.00	-
E	NFW-3D-1		-	2.50
E	NFW-10D-2		-	2.50
Total			100.00	100.00

Liquid Eye Liner		(%)
		DE-0006-6SJ
A	De-ionized Water	50.50
A	1,3-Butylene glycol	1.00
A	THICKAGENT LC	0.20
A	Preservative	0.30
B	CB Paste No.6	18.00
C	DAITOSOL 5000SJ	30.00
Total		100.00

Liquid Stocking		(%)
		DO-0005-SJ
A	De-ionized Water	66.60
A	Carbomer	0.300
B	DAITOSOL 5000SJ	5.00
C	Triethanolamine	0.30
D	Ethanol	25.00
E	PRESTIGE BRIGHT SILVER	1.50
E	PRESTIGE BRONZE	0.80
E	PRESTIGE LEMON GOLD	0.50
Total		100.00

**[REMARK]**

We don't take any responsibility concerning to use of these formulations. These formulations are suggested as guidance. The health and safety test has not been established by testing. Evaluation and testing are needed to the final formulation.

Stretch Sun Screen		Product Name	(%)	
			DS/002	Blank
A	Phenyl trimethicone	KF-56	1.00	1.00
A	Tridecyl isononanoate	SALACOS 913	3.00	3.00
A	CELLULOBEADS D-10		3.00	3.00
A	Dimethicone/vinyl dimethicone crosspolymer, Dimethicone	KSG-16	1.00	1.00
A	Daitopersion Zn-50		30.00	30.00
A	Daitopersion Ti-30		20.00	20.00
A	Cyclomethicone	KF-995	5.00	5.00
B	De-ionized water		19.65	29.65
B	1,3-Butylene glycol		6.00	6.00
B	Sodium chloride		1.00	1.00
B	Preservative	PHENONIP	0.30	0.30
B	4Na-EDTA		0.05	0.05
C	DAITOSOL 5000SJ		10.00	-
		Total	100.00	100.00

## Flexibility of Sun Screen

Applied on the artificial skin (0.08g/40cm<sup>2</sup>), dried for 1 hour, stretched the artificial skin, and checked the appearance.



DS/002



Blank

(+5000SJ 10%)

Peeling Massage Cream		(%)
		DO-0026-D200
A	Glycerin	10.00
A	Ethanol	10.00
A	Preservative	0.30
A	COVACRYL RH (Sodium Polyacrylate)	2.00
A	Phenyl trimethicone	20.00
B	DAITOSOL 5000AD	52.70
C	CELLULOBEADS D-200	5.00
		Total 100.00

Lifting Gel		(%)
		DO-0032-SJ
A	Glycerin	10.00
A	1,3-Butylene glycol	3.00
A	Preservative	0.30
A	COVACRYL RH (Sodium Polyacrylate)	1.00
A	VEGETENS OR	0.50
A	COVA B TROX	1.00
A	De-ionized water	76.20
B	DAITOSOL 5000SJ	5.00
C	Cyclomethicone	3.00
		Total 100.00

### [REMARK]

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