

# COSMOTEN® 100 SERIES SURFACTANTS











Sustainable inspiration



**polaquimia**

*Ecosustainable Chemical Innovation*

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## Cosmoten® 100 series surfactants



Our new line of products is a generation of biodegradable<sup>(5)</sup> nonionic surfactants. They are excellent candidates for use in systems also known as “Green Products”.

Table 1. Physical and Chemical properties.<sup>(1)</sup>

Property	Cosmoten® 100 series surfactants			
	Cosmoten®103	Cosmoten® 105	Cosmoten®106	Cosmoten® 114
HLB	13.48	14.84	15.36	18.20
Active Content wt%	100.0	100.0	100.0	100.0
Appearance at 25°C	Opalescent liquid	Opalescent liquid	Gel <sup>(2)</sup>	Waxy solid <sup>(3)</sup>
Color (Pt-Co)	50.0 max.	50.0 max.	50.0 max.	50.0 max.
Moisture Karl Fischer (%)	1.0 max.	1.0 max.	1.0 max.	1.0 max.
pH 1% in water	5.0-7.5	6.0-8.0	6.0-8.0	6.0-8.0
Boiling point (°C)	160.0	192.0	210.0	210.0
Flash Point (°C)	116.0	134.0	164.0	272.0
Viscosity at 25°C (cps)	82.0	197.0	1054.0	**
Cloud point (°C)	69.0 <sup>B</sup>	85.0 <sup>E</sup>	88.5 <sup>E</sup>	75.0 <sup>C</sup>
Ross-Miles foam test initial / 5 min. (cm) <sup>+</sup>	21.0 / 17.0	14.0 / 10.5	10.0 / 7.0	12.0 / 0.1
Surface tension (dynes/cm) <sup>++</sup>	30.7	27.0	27.5	55.4

<sup>(1)</sup> Typical properties, not to be construed as specifications. <sup>(2)</sup> Liquid, 80% active content. <sup>(3)</sup> Liquid, 70% active content. \*\* Waxy solid. <sup>B</sup> Alcoholic solution with NaCl at 0.5%. <sup>C</sup> At 1% in NaCl solution at 10% in water w/v. <sup>E</sup> At 1% in water. <sup>+</sup> Ross-Miles foam test, 0.1 wt% at 25°C. <sup>++</sup> Fisher Tensiometer, 0.1% wt% at 25°C.

### Wetting Time

There are several industrial sectors (Textile, Cleaning Products and Agrochemicals), where the use of wetting agents is important. Cosmoten® 100 series surfactants are ideal for use in various applications to present a good performance in wetting.





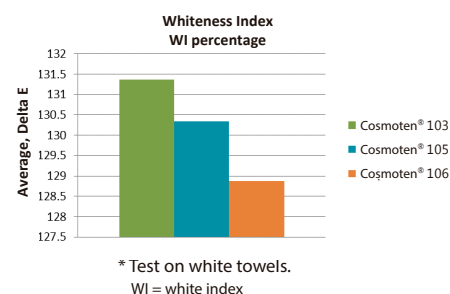
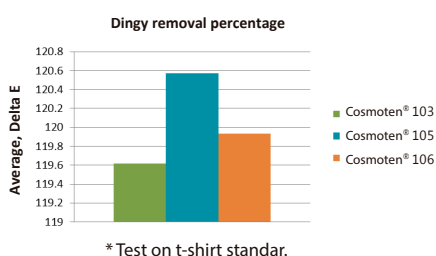
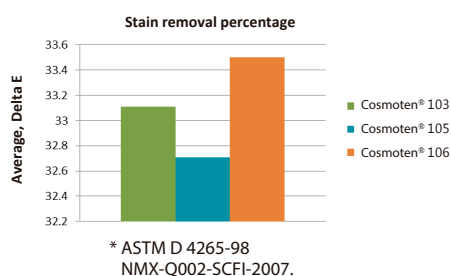
## Characteristics



### Stain removal and whiteness tests. <sup>(4)</sup>

- Cosmoten® 100 series surfactants have suitable detergent power.
- Our products have a good competitive stain removal behavior against others nonionic surfactants.

These surfactants allow for a synergy with anionic and cationic surfactants, providing significant formulating flexibility.



(4) Evaluation of nonionic product, unformulated.

### Solubility

Cosmoten® 100 series surfactants display very good solubility in a wide range of common solvents.

### Electrolytes

Our products Cosmoten® 103, Cosmoten® 105 and Cosmoten® 106 have good solubility in electrolyte solutions.

Table 3. Solubility in electrolyte solution (10 wt% surfactant, 5% electrolyte at 25°C).

Electrolyte	Cosmoten® 100 series surfactants		
	Cosmoten® 103	Cosmoten® 105	Cosmoten® 106
HCl, 5%	Soluble	Soluble	Soluble
NaCl, 5%	Soluble	Soluble	Soluble
Potassium Tripolyphosphate, 5%	Soluble	Soluble	Soluble
NaOH, 5%	Soluble	Soluble	Soluble

Table 3. Solubility of surfactants in solvents (5 wt% at 25°C).

Solvent	Cosmoten® 100 series surfactants			
	Cosmoten® 103	Cosmoten® 105	Cosmoten® 106	Cosmoten® 114
Ethanol	Soluble	Soluble	Soluble	Soluble
Isopropyl alcohol	Soluble	Soluble	OS	OS
Acetone	Soluble	Soluble	Soluble	Soluble
DGM	Soluble	Soluble	Soluble	Soluble
Xylene	Soluble	Soluble	Soluble	Soluble

DGM = Diethylene glycol monobutyl ether

Soluble   
OS = Opalescent Soluble



## Water solubility

Cosmoten<sup>®</sup> 100 series surfactants on a wide range of concentrations, exhibit excellent solubility in water, being an ideal feature for their handling and formulation.

Table 4. Solubility in water (wt% surfactant in aqueous solution at 25°C).

Cosmoten <sup>®</sup> 100 series surfactants	Concentration of surfactant, wt%								
	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %
Cosmoten <sup>®</sup> 103									
Cosmoten <sup>®</sup> 105									
Cosmoten <sup>®</sup> 106									

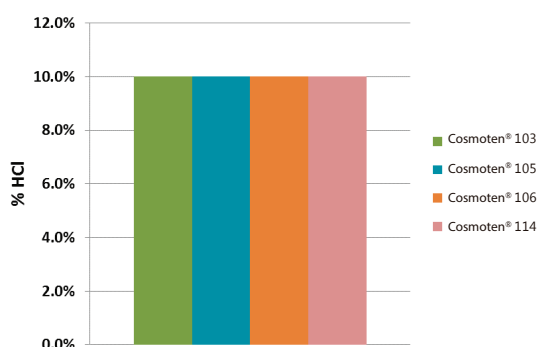
Soluble



Insoluble



Figure 1. Acid resistance (1 wt% surfactant at 25°C).



## Acid and Alkaline Stability

Cosmoten<sup>®</sup> 100 series surfactants, have shown special characteristics of good strength and stability in both acid and alkaline media, allowing for excellent application in a wide range of manufacturing processes.

## Viscosity

Cosmoten<sup>®</sup> 100 series surfactants have relatively low viscosities at different temperatures and therefore have excellent handling characteristics in aqueous solutions.

Figure 2. Viscosity in aqueous solution at 25°C.

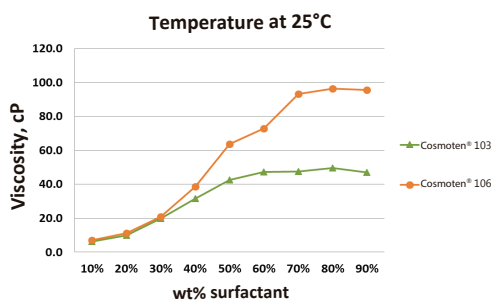
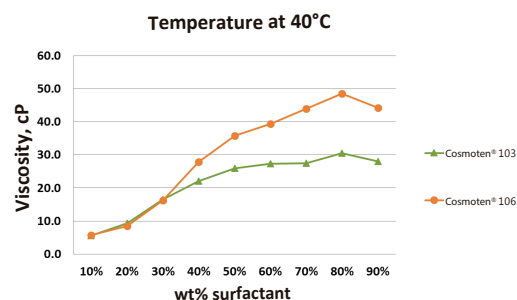


Figure 3. Viscosity in aqueous solution at 40°C.



## Biodegradability

Cosmoten<sup>®</sup> 100 series surfactants are biodegradable > 60 percent biodegradation within 28 days.<sup>(5)</sup>













Cosmoten<sup>®</sup> 100 series surfactants are products designed to be environmentally friendly, capable to be biodegradable surfactants in a specific media.<sup>(5)</sup>

(5) Method based on:  
USEPA 40 CFR 796 3200-1995  
ASTM D2667. Standard Test Method for Biodegradability of Alkylbenzene Sulfonates.  
ASTM E1625. Standard Test Method for Determining Biodegradability of Organic Chemicals.



## Suggested use

Cosmoten® 100 series surfactants	Industry				
	Agrochemicals	Detergents & cleaning products	Emulsion polymerization	Paints	Textile
Cosmoten® 103					
Cosmoten® 105					
Cosmoten® 106					
Cosmoten® 114					



– Please contact us for more information about Cosmoten® 100 series surfactants.





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