TECHNICAL DATA SHEET

Flexiclean™ CC-630

Functionalized dispersant for "acid side" cleaning

Overview

- Partially neutralized dispersant used in encapsulating carpet and upholstery cleaning formulations
- Optimized for use in peroxide and other acid formulations (pH <6) Provides maximum acid dye resistance (Stain resistance)
- Provides powerful cleaning properties without tacky residue
- Eliminates rapid resoiling through brittle dry down and encapsulation
- Formulations are readily certifiable via Carpet and Rug Institute (CRI) Seal of Approval program, Green Seal GS-37, and other Independent Certification programs
- Enhances dry soil pick-up during vacuuming
- Imparts anti-soiling properties to cleaned surfaces
- Allows reduction of the detergent load in cleaning formulations
- Ultra-Low VOC for effective formulations with less than 1% total VOC
- Enables use of one "Super Concentrate" to create an entire "Next Generation" carpet cleaning program
- Suitable for Woolsafe™ formulations

Applications

- Peroxide and acid pH cleaning formulations
- Commercial and Retail carpet and upholstery cleaners
- Extraction, Pre-spray, Traffic Lane, Spotter, Low Moisture, and Bonnet Buff formulations
- Automotive carpet and upholstery cleaners

Technical Information

Many carpet cleaning products used in the commercial and retail marketplace are highly alkaline detergent/surfactant systems that leave behind tacky soil-attracting residues. The chemical nature of high alkaline tacky products can sometimes damage the stain resistance built into the carpet by the carpet manufacturer. While some of these products clean effectively, their residues will actually damage the carpet and cause rapid resoiling. This rapid resoiling can result in complaints from owners who have their carpets professionally cleaned, only to find that the carpet gets dirty and grey soon after cleaning. Another common complaint related to carpet and upholstery spot cleaners is that upon removing a stain, the stain quickly returns, bigger than the original spot. This effect is caused by tacky residual detergent attracting oily particulate soil. It is not that the stain came back: a new stain is appearing because of the nature of the spot cleaner's residue.

These common industry problems have led to the Carpet and Rug Institute's recent Seal of Approval Program which verifies and certifies a product's cleaning and resoiling character (www.carpet-rug.org). Using Flexiclean CC-630 in popular "acid side" upholstery and carpet cleaning formulations eliminates these problems. When used as prescribed, Flexiclean CC-630 formulations can be readily certified via the CRI Seal of Approval Program, providing a next generation product with excellent cleaning and minimal resoiling in "acid side" cleaning products.

Typical Properties

PROPERTY	VALUE
Appearance	Clear, colorless to pale yellow liquid
Odor	Mild
Ionic character	Anionic
Water solubility	Soluble
pH (as is)	5.5±1.0
Density@25°C	1.07±0.02
Boiling Point	100°C
Flash point	None (aqueous)
Storage	Stable to freezing
Shelf life	12 months

Packaging and Handling

Flexiclean CC-630 is available in:
275 gallon totes (Net Wt. 2300 lbs)
55 gallon plastic drums (Net Wt. 460 lbs)
5 gallon pails (Net Wt. 40 lbs).

Refer to the Safety Data Sheet (SDS) for information on the safe use, handling, and disposal of this product.

DOT Classification: Non-Regulated

Whether you're looking for a replacement product or an ingredient for a specific attribute, give us a call. We can provide assistance based upon your particular formulation requirements and composition; please feel free to contact us.

Please refer to back page for important information

Flexiclean CC-630
Low pH formulating ingredient

Flexiclean CC-630 is a versatile formulating ingredient for formulated Carpet and Upholstery cleaning products. Designed for performance synergies with other optimized ICT ingredients, Flexiclean CC-630 can be formulated into best-of-class performance end-use products and Super Concentrates.

Acid side cleaning is becoming a popular option in the carpet cleaning industry. Flexiclean CC-630 is an ideal raw material choice for acid side applications. When effectively formulated, Flexiclean CC-630 imparts maximum stain and soil resistance.

Flexiclean CC-630 is a unique Next Generation detergent polymer that provides effective cleaning performance that virtually eliminates the resoiling deficiencies of older generation carpet and upholstery cleaning products by lifting and encapsulating soils and tacky residues.

ICT has developed and optimized ingredients that enhance and synergize the cleaning and soil encapsulating performance of Flexiclean CC-630:

Flexisperse™ 318
Unique anti-soiling polymer and soil encapsulator
Flexisperse 318 is an anti-soiling polymer developed for use in carpet care products as a anti-soiling builder that enhances stain resistance and encapsulates residues. When used with Flexiclean CC-630, Flexisperse 318 provides:
- Enhanced soil resistance
- Eliminates resoiling
- Reduced scale and hard water deposits on equipment
- Provides anti-soil redeposition

Flexisurf™ LO-30
Versatile peroxide stable detergent and cleansing agent
Flexisurf LO-30 is a natural, bio-renewable feedstock-based surfactant that provides detergent performance to a wide range of cleaning formulations. Peroxide and hypochlorite stable, when used with Flexiclean CC-630, Flexisurf LO-30 provides:
- Increased wetting and penetration, especially with olefin and polyester fibers
- Improved cleaning and soil/stain removal
- Enhanced anti-soiling properties

Range of formulating options

Ingredients such as fragrance, chelates and polar solvents can be added as desired. Any ingredient additions should be evaluated for their effect on soiling and peroxide stability. Peroxide stability should be determined before packaging.* Additional or alternative stabilizing agents may be added to satisfy local conditions or specific formulary. Final formulations may require addition of a preservative and should be tested for adequate spoilage protection.

OXY Spotter	
Ingredient	**Wt. %**
Water, DI or soft Dequest 2010LC	79.0 0.5
NaOH (50%)	0.5
Flexisperse 318	5.0
Flexiclean CC-630	5.0
Hydrogen Peroxide, 30% *(see handling note)	10.0

H_2O_2 Stability @50°C

Initial H_2O_2	2.72
24 hour H_2O_2	2.64
1 week H_2O_2	2.62

pH:	6.2
Appearance:	Clear, colorless liquid

Use as is

Pre-spray	
Ingredient	**Wt. %**
Water, DI or soft Dequest 2010LC	53.25 0.5
NaOH (50%)	1.25
Flexisperse 318	10.0
Flexiclean CC-630	25.0
Hydrogen Peroxide, 30% *(see handling note)	10.0

H_2O_2 Stability @50°C

Initial H_2O_2	2.59
24 hour H_2O_2	2.50
1 week H_2O_2	2.26

pH:	6.2
Appearance:	Clear, colorless liquid (very slight blue hue)

Use dilution: *1:5*

**** Hydrogen Peroxide handling note:** Care must be taken to insure in-package hydrogen peroxide stability in the starting point formulations listed. Hydrogen peroxide instability can lead to package bloating and leakage. Contact your hydrogen peroxide supplier for handling/packaging guidance.*

Range of formulating options

Low Moisture	
Ingredient	**Wt. %**
Water, DI or soft Dequest 2010LC	48.25 0.5
NaOH (50%)	1.25
Flexisperse 318	10.0
Flexiclean CC-630	25.0
Flexisurf LO-30	5.0
Hydrogen Peroxide, 30% *(see handling note)	10.0

H_2O_2 Stability @50°C

Initial H_2O_2	2.43
24 hour H_2O_2	2.37
1 week H_2O_2	2.17

pH: 6.2
Appearance: Clear, pale yellow solution

Use dilution: *1:10*

Extraction	
Ingredient	**Wt. %**
Water, DI or soft Dequest 2010LC	70.8 0.5
NaOH (50%)	0.7
Flexisperse 318	8.0
Flexiclean CC-630	10.0
Hydrogen Peroxide, 30% *(see handling note)	10.0

H_2O_2 Stability @50°C

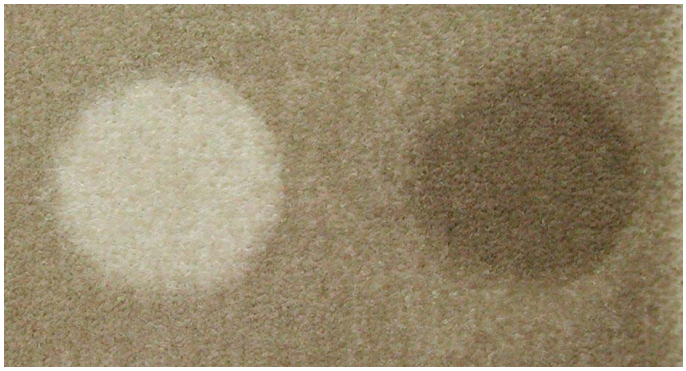
Initial H_2O_2	2.59
24 hour H_2O_2	2.50
1 week H_2O_2	2.26

pH: 6.2
Appearance: Clear, pale yellow solution

Use dilution: *1:32*

Soiling performance data

Evaluation of Resoiling Characteristics of Carpet Cleaning Products
***Accelerated Soiling of Pile Yarn Floor Covering* (ASTM D 6540-00)**
This is a standardized laboratory procedure for determining resoiling properties of a specified floor covering. A control test carpet is prepared by applying 3 grams of ready-to-use cleaning solution diluted according to label instructions in a 2.5 inch circle template. The control test carpet is allowed to thoroughly ambient temperature dry and is then soiled per ASTM D6540-2000. Additional control carpet that has no cleaning solution applied is soiled per ASTM D6540-2000. The difference (ΔEc) between the unsoiled carpet and the soiled control; and the difference (ΔEt) between the unsoiled carpet and the soiled test carpet (cleaned) are measured using a HunterLab Miniscan XE Spectrophotometer. The difference between these results is calculated as: ΔΔE = ΔEc - ΔEt
26 oz. cut pile, nylon 6,6 tenth gauge, carpet squares (free of any prior dye or stain protection treatments) were used in this evaluation.



Flexiclean CC-630 Extraction Cleaner | Commercial Extraction Cleaner

Test Results			
Sample	**ΔEc**	**ΔEt**	**ΔΔE***
1	15.80	9.52	6.28
2	14.13	21.53	-7.40

* Negative numbers indicate treated carpet attracts more soil than the untreated standard

Sample 1: Flexiclean CC-630 based extraction cleaner
Sample 2: Commercial extraction cleaner product

The difference (ΔΔE) between the treated and untreated carpet squares after soiling and cleaning was +13.68 ΔΔE units, indicating a strong resistance to carpet soiling for the Flexiclean CC-630-based formulation versus the Commercial product.

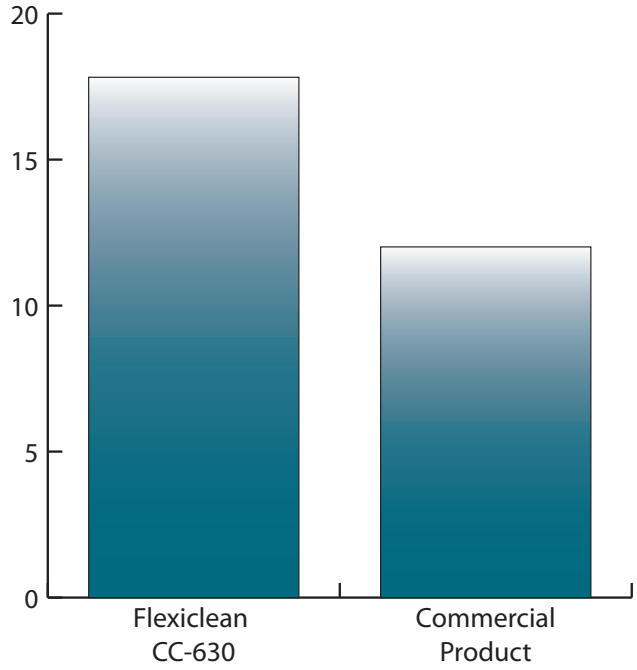
Cleaning performance data

Cleaning Efficacy Evaluation of Carpet Cleaning Products

***Evaluation Procedures for CRI Carpet Cleaning Certification of In-Tank and Pre-Spray Cleaning Products* (CRI TM 111)**

This is a standardized laboratory procedure for determining the cleaning efficacy of cleaning chemicals which are designed to be applied as a pre-spray or by using extraction equipment. Uniformly soiled control test carpet is prepared per ASTM D6540-2000. Additional unsoiled control carpet is prepared. The soiled control test carpet is cleaned using specific extraction equipment and procedures. The difference (ΔEs) between the soiled control test carpet and the unsoiled control carpet; and the difference (ΔEf) between the cleaned control carpet and the unsoiled control carpet is measured using a HunterLab Miniscan XE Spectrophotometer to determine the degree to which the cleaning chemical was able to restore the control carpet to its original appearance. The difference between these results is calculated as: ΔΔE = ΔEs - ΔEf

This test practice is applicable to all liquid carpet cleaning chemicals.



Test Results					
Sample	**ΔEs**	**ΔEf**	**ΔΔE***	**Wet Passes**	**Dry Passes**
1	21.05	3.23	17.82	3	3
2	20.35	8.34	12.01	3	3

* Larger, more positive numbers indicate cleaner carpet

Sample 1: Flexiclean CC-630 based extraction cleaner
Sample 2: Commercial extraction cleaner product

26 oz. cut pile, nylon 6,6 tenth gauge, carpet squares (free of any prior dye or stain protection treatments) were used in this evaluation. The extraction equipment specifications of control extractor/wand: 1.0 gallon solution tank; 1.5 gallon recovery tank; 60 psi solution pump; 3 stage 1.8 hp vacuum motor; 136 inch sealed water lift; single jet (110-03) 4" wand.

The difference (ΔΔE) between the cleaned carpet squares after soiling and cleaning was +5.81 ΔΔE units, with >1ΔΔE unit being significant and readily observable, indicating a strong cleaning performance result for the Flexiclean CC-630-based formulation versus the Commercially Available product.