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## **Solutions for Industrial and Institutional Cleaning**

A broad portfolio of technologies targeting the needs of cleaning companies and formulators

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### Opening the door to innovative cleaning solutions

Dow offers the industrial and institutional cleaning market a wide variety of products, opening the door to innovative cleaning solutions. A broad portfolio of Dow ingredients for cleaning formulations offers you the convenience of a single-source supplier with in-depth knowledge of formulations and components. Our offerings can help develop cleaning technologies for applications including hand and automatic dishwashing; air care; janitorial and sanitation services; commercial kitchen and catering cleaning; food, dairy and beverage processing; fabric and laundry; professional floor care and transportation cleaning.

The diversity of our product range, application experience and understanding of technology interactions enables us to help you create customized solutions for your needs. The unique functional and economic characteristics of these materials provide flexibility and agility to respond to industry changes. Dow's strong materials science foundation, paired with a focus on innovation, positions us to help you meet the challenges you face today and tomorrow.

Starting from your specific performance requirements, our dedicated regional teams tap into Dow's global capabilities to help you identify targeted solutions efficiently and effectively. Our combination of science and experience will help you get to market more quickly with an effective formulation. We help our customers deliver distinct functional benefits that can enable new and differentiated label claims. Let us help you formulate the next generation of industrial and institutional cleaning products.

### Leaving a lighter environmental footprint

Dow is committed to helping you create more sustainable products that minimize environmental impact during production, use and disposal. Many of our products meet or exceed existing environmental regulations and ecolabel programs:

- CleanGredients® Database
- U.S. Environmental Protection Agency (EPA) Safer Products Standard
- EU Detergents Regulation
- EU Ecolabel Criteria
- Colombia Resolution 0689 (Biodegradability of Surfactants in Detergents and Soaps)

As an industry leader in sustainability, we are committed to reducing our environmental footprint, increasing resource efficiencies and developing multi-functional products that do more for consumers. Our formulation specialists help customers develop high-value formulations that can help conserve natural resources and support more efficient manufacturing processes. Our sustainability and regulatory leaders are at the intersection of business, government and society to help drive the transition to a more sustainable planet and society.

### Greater speed to market with rapid formulation development

Our rapid formulation development capabilities can greatly streamline evaluation tests to help achieve better cleaning and surface care formulation performance. This system uses automated chemical testing, properties measurement equipment and software that give precise control over the experimental template, sample processing and evaluation parameters, including corrosion, storage stability, optical properties, ingredient solubility, laundry performance, surface cleaning performance, filming, streaking and more.

### Just a starting point...

With a focus on innovation, we are continually developing new products, technologies and delivery systems. Review the summary of our products and ingredients on the following pages. While the list is extensive, it is only a starting point for understanding how our capabilities can help you succeed faster in the marketplace.

Let's work together to meet your industrial and institutional cleaning needs. For more information on products, formulations, samples or technical assistance, contact your Dow representative.

## Contact Us Today

Let's work together to meet your industrial and institutional cleaning formulating needs. For more information on products, samples or technical assistance, connect with us at [dow.com/iicleaning](http://dow.com/iicleaning).

### Surfactants

Dow ECOSURF™, TERGITOL™, TRITON™ and DOWFAX™ surfactants offer a wide variety of options to meet your unique needs in Institutional and Industrial (I&I) cleaning formulations. Our offerings assist in cleaning, wetting and solvency while helping achieve the desired foam profile. Sustainability is important to Dow and our customers, so many products are readily biodegradable and are based on renewable raw materials. Dow surfactants offer flexibility for all types of I&I formulations, enabling our customers to build successful products and win in a competitive and rapidly changing market.

Products	Readily Biodegradable	Manual Pot & Pan	Auto Dishwash	Air Care	Janitorial & Sanitation	Kitchen & Catering	Food, Dairy & Beverage	Fabric & Laundry	Floor Care	Transportation	Metal Cleaning
<b>ECOSURF™ and TERGITOL™ Specialty Ethoxylates</b>											
ECOSURF™ EH Series	All	•			•	•	•	•	•	•	•
TERGITOL™ 15-S Series	All	•			•	•	•	•	•	•	•
ECOSURF™ SA Series	All	•			•	•	•	•	•	•	•
TERGITOL™ TMN Series	No Grades						•		•	•	•
<b>TERGITOL™ and DOWFAX™ EO/PO Copolymers</b>											
TERGITOL™ L / DOWFAX N Series	Most Grades	•	•		•	•	•	•	•	•	•
DOWFAX™ 20A/B Series	All	•	•		•	•	•	•	•	•	•
DOWFAX™ DF Series	Most Grades	•	•		•	•	•	•	•	•	•
<b>TERGITOL™ and TRITON™ Alkylphenol Ethoxylate Surfactants</b>											
TERGITOL™ NP Series	No Grades				•	•	•	•	•		•
TRITON™ X Series	Most Grades	•			•	•	•	•	•	•	•
<b>Low Foam Surfactants</b>											
ECOSURF™ LFE Series	All	•	•		•	•	•		•	•	•
TRITON™ DF Series	All	•	•		•	•	•		•	•	•
TRITON™ CF Series	No Grades	•	•		•	•	•		•	•	•
TERGITOL™ MinFoam	No Grades	•	•		•	•	•		•	•	•
ECOSURF™ LF Series	All	•	•		•	•	•		•	•	•
<b>Anionic Surfactants</b>											
DOWFAX™ Anionic Series	No Grades	•			•	•	•		•	•	•
TRITON™ H Series	All	•			•	•	•		•	•	•
TRITON™ GR Series	All						•	•			
TRITON™ QS-15	–						•				•
<b>Alkyl Polyglucosides</b>											
TRITON™ BG & CG	All	•	•		•	•	•		•	•	
<b>Polyethylene Glycols and Polypropylene Glycols</b>											
CARBOWAX™ Polyethylene Glycols	Most Grades			•	•			•			
Polypropylene Glycols	Most Grades	•								•	



## Solvents

- DOWANOL™ Solvents, CELLOSOLVE™ Solvents, CARBITOL™ Glycol Ethers and Isopropanol increase the effectiveness of institutional cleaners and degreasers, allowing wide formulating opportunities. Additional potential benefits include low odor, low toxicity and good biodegradability.
- Propylene Glycol (PG) and Dipropylene Glycol (DPG) are designed for use in heavy duty liquid laundry detergents and fragrance delivery applications. Dow PG products can offer consistent, high purity and an extended shelf life.

Product	Consumer Products US EPA LVP Exemption <sup>1</sup>	Manual Pot & Pan	Air Care	Janitorial & Sanitation	Kitchen & Catering	Food, Dairy & Beverage	Fabric & Laundry	Floor Care	Metal Cleaning
DOWANOL™ PnB	VOC		•		•	•		•	•
DOWANOL™ DPnB	Not VOC	•	•		•	•		•	•
DOWANOL™ TPnB	Not VOC	•	•		•	•		•	•
DOWANOL™ EPh	Not VOC	•				•		•	•
DOWANOL™ PPh	Not VOC	•						•	•
DOWANOL™ DiPPh	Not VOC				•	•			•
DOWANOL™ PnP	VOC		•		•			•	
DOWANOL™ DPnP	Not VOC		•		•	•		•	•
DOWANOL™ PM	VOC			•	•			•	•
DOWANOL™ DPM	VOC			•	•			•	
DOWANOL™ PMA	VOC			•	•				
CARBITOL™	Not VOC							•	
Methyl CARBITOL™	VOC							•	
Butyl CARBITOL™	Not VOC		•	•	•		•	•	•
Butyl CELLOSOLVE™	VOC			•	•		•	•	
Hexyl CELLOSOLVE™	Not VOC				•	•		•	
Hexyl CARBITOL™	Not VOC				•	•	•	•	•
PROGLYDE™ DMM	VOC							•	•
Isopropanol	VOC	•				•		•	•
UCAR™ Filmer IBT	Not VOC							•	
Propylene Glycol (PG) and Dipropylene Glycol (DPG)	Not VOC	•					•	•	

<sup>1</sup>40 CFR Chapter 1 Subpart C. National Volatile Organic Compound Emission Standards for Consumer Products, 59.203 From 63 FR 48831, Sept 11, 1998

## Chelants

Chelants help maintain clarity, retard rancidity, prevent streaking, remove hard water soap/film and prevent scale in a wide variety of formulations including hard surface cleaners, laundry detergents, liquid soaps, germicidal and anti-bacterial cleansing preparations and vehicle cleaners.

Product	Manual Pot & Pan	Auto Dishwash	Janitorial & Sanitation	Kitchen & Catering	Food, Dairy & Beverage	Fabric & Laundry	Floor Care	Transportation	Metal Cleaning
VERSENE™	•	•	•	•	•	•	•	•	•
VERSENEX™	•			•		•	•	•	
VERSENOL™			•	•		•	•	•	

**Dispersants**

- ACUSOL™ Dispersants are designed to control scale formation and disperse and remove dirt and minerals in a full spectrum of household, industrial and institutional applications. ACUSOL™ Dispersants help maintain softer, whiter fabrics and cleaner, better-looking surfaces.
- ACUSOL™ 845 Anti-Redeposition Polymer is a specialty dispersant for liquid laundry that helps keep clothes looking cleaner and whiter by preventing redeposition of soils.

Product	Manual Pot & Pan	Auto Dishwash	Janitorial & Sanitation	Kitchen & Catering	Food, Dairy & Beverage	Fabric & Laundry	Transportation
ACUSOL™ 190K				•	•	•	
ACUSOL™ 420NG		•	•	•	•	•	
ACUSOL™ 425N		•	•	•	•	•	
ACUSOL™ 445/ ACUSOL™ 445G	•	•	•	•	•	•	•
ACUSOL™ 445N/ ACUSOL™ 445NG		•	•	•	•	•	•
ACUSOL™ 460NK/ ACUSOL™ 460ND	•	•	•	•	•	•	
ACUSOL™ 465		•	•	•	•	•	
ACUSOL™ 470N		•	•	•	•	•	
ACUSOL™ 497N/ ACUSOL™ 497NG	•	•	•	•	•	•	
ACUSOL™ 588/ ACUSOL™ 588G		•	•	•	•	•	•
Specialty Dispersants for Liquid Laundry							
ACUSOL™ 845 Anti-Redeposition Polymer						•	





### Rheology Modifiers

ACUSOL™ Rheology Modifiers can be used to control flow properties, stabilize formulations, suspend particles, provide vertical wall cling, reduce misting and control uniform dosing of a formulation.

Product	Auto Dishwash	Janitorial & Sanitation	Kitchen & Catering	Food, Dairy & Beverage	Fabric & Laundry	Floor Care	Transportation
ACUSOL™ 801S					•		•
ACUSOL™ 805S	•						•
ACUSOL™ 810	•	•	•	•	•	•	•
ACUSOL™ 820	•	•	•				•
ACUSOL™ 823 ER	•	•	•		•		•
ACUSOL™ 830		•			•		•
ACUSOL™ 880		•			•		•
ACUSOL™ 882		•			•		•

### Opacifiers

ACUSOL™ Opacifiers impart a milky or lotionized appearance to formulated products.

Product	Janitorial & Sanitation	Kitchen & Catering	Fabric & Laundry
ACUSOL™ OP Series	•	•	•
ACUSOL™ OP 302B	•	•	•
ACUSOL™ OP 303B	•	•	•
ACUSOL™ OP 305	•	•	•

**Floor Care Polymers**

Floor care film formers are polymeric products that leave a protective layer upon drying. The polymeric film protects, maintains appearance and adds shine to floors. Floor care film formers can be either floor polishes (removable by amine-based strippers) or floor sealers (permanent films that resist removal).

- DURAGREEN™ Series Floor Care Polymers
- DURAPLUS™ Series Floor Care Polymers
- DURAPLUS ADVANTAGE™ Series Floor Care Polymers
- PRIMAL™ Series Floor Care Polymers
- PRIMAL™ NT Series Floor Care Polymers
- RHOPLEX™ Series Floor Care Polymers
- UHS PLUS™ Series Floor Care Polymers

**Amines**

Dow is the world’s largest producer of ethanolamines, and an industry leader in isopropanolamines. These products can offer differentiation to cleaning formulations by providing stable pH control and good anti-deposition properties.

Product	Consumer Products US EPA LVP Exemption <sup>1</sup>	Manual Pot & Pan	Janitorial & Sanitation	Kitchen & Catering	Food, Dairy & Beverage	Fabric & Laundry	Transportation
Ethanolamines	All VOC	•	•		•	•	•
Isopropanolamines	Most Not VOC	•	•	•	•	•	•

<sup>1</sup>40 CFR Chapter 1 Subpart C. National Volatile Organic Compound Emission Standards for Consumer Products, 59.203 From 63 FR 48831, Sept 11, 1998







## Silicones

- **Surfactants:** Silicone Polyethers are a series of polyalkylene oxide-modified polydimethylsiloxane surfactants that provide excellent wetting and lubricity and are effective at very low levels. When used in glass cleaners, silicone surfactants provide lubricity to the cleaning action and anti-fogging properties. Silicone surfactants enable water-in-silicone emulsions that are useful in formulating automotive polishes. These emulsions have easy to apply and rub-out benefits.
- **Film Formers:** Dow silicone film forming materials provide appearance-enhancing properties to hard surfaces to help you create products with improved shine, gloss, water repellency and durability.
- **Foam Control:** Silicone foam control solutions provide consistent management of foam during industrial laundry processes and are available in a range of formats. Silicone antifoams help improve process efficiency by ensuring that unwanted foam does not interfere with production or packaging. These materials help you formulate high-efficiency (HE) laundry detergents with the right foam control.
- **Fabric Care:** Silicones softeners are known for their fabric treatment benefits in the Textile and Consumer markets. The use of silicone in industrial laundry can provide fabric softness, increase mechanical strength, and enable fabric water absorbency.
- **DOWSIL™ and XIAMETER®** emulsions are developed as fabric care additives for use in rinse-cycle fabric conditioners. These materials improve the performance of base fabric softeners. Our range includes macro and micro-emulsions and can help you formulate with confidence. Put DOWSIL™ FM-6620 Emulsion, XIAMETER® MEM-8035 Emulsion and XIAMETER® 8203 Emulsion to the test.

Product	Manual Pot & Pan	Auto Dishwash	Fabric & Laundry	Transportation
XIAMETER® APW Powdered Antifoams		•	•	•
DOWSIL™ GZ Granulated Zeolites	•	•	•	
DOWSIL™ and XIAMETER® Antifoam Emulsions and Compounds			•	•
XIAMETER™ OFX-0531 Fluid, OFX-0536 Fluid				•
DOWSIL™ 2-1912 FLUID				•
DOWSIL™ 3527 Release Agent				•
XIAMETER™ MEM-1101 Emulsion				•
XIAMETER™ MEM-8035 Emulsion				•







## Contact Us Today

Let's work together to meet your industrial and institutional cleaning formulating needs. For more information on products, samples or technical assistance, connect with us at [dow.com/iicleaning](http://dow.com/iicleaning).

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