



## DOWFAX™ 20A42 Nonionic Surfactant

### General Information

The Dow Chemical Company is a science and technology-based company and one of the world's largest producers of polyalkylene glycols. Our worldwide research, manufacturing, and distribution includes facilities in Europe, North America, Latin America, and Asia-Pacific. With over 30 years experience in polyglycol manufacturing, the industry's broadest product line, and a leadership position in new product development, Dow is uniquely positioned to meet the needs of a diverse global marketplace. This success results from expanding our customers' markets through combined customer formulation knowledge and Dow alkoxylation expertise in joint development applications. Together we focus these resources to help ensure success for our customers and their products.

### Sustainability Attribute:



### DOWFAX™ Nonionic Surfactants

DOWFAX™\* Nonionic Surfactants are high-performance products that feature excellent solvency, low foam characteristics, chemical stability, and a long list of other valuable performance properties. They are produced by polymerizing ethylene oxide (EO), propylene oxide (PO), and/or butylene oxide (BO) in the same molecule. The ratio and order of oxide addition, together with the choice of initiator, control the chemical and physical properties.

#### DOWFAX™ 20A42 Nonionic Surfactant —Product Characteristics

DOWFAX™ 20A42 Nonionic Surfactant is a clear, slightly viscous liquid at room temperature with a low pour point. It is an efficient surfactant by having low foam characteristic and high degree of surfactancy. See Table 1 for Typical Properties of DOWFAX™ 20A42 Nonionic Surfactant.

DOWFAX™ 20A42 Nonionic Surfactant is sparingly soluble in water at room temperature. Higher concentrations of DOWFAX™ 20A42 Nonionic Surfactant can be dissolved in water with the aid of coupling agents, such as DOWANOL™ DPM Glycol Ether. These surfactant solutions with a cosolvent show reverse solubility at higher temperatures. The temperatures at which this happens is called the cloud point. The optimum operating temperature range for detergency and low foam characteristic is +/-10°C of the surfactants' cloud point in that system.

## Applications and Uses

Due to its low foaming characteristic, DOWFAX™ 20A42 Nonionic Surfactant is used in cleaning and rinse formulations that are applied by high-pressure sprays like automatic dishwashing detergents and metal cleaning production. It is typically used in combination with other DOWFAX™ Nonionic Surfactants, such as DOWFAX™ 20A64 Nonionic Surfactant. DOWFAX™ 20A42 Nonionic Surfactant is also used in textile processing auxiliaries, household cleaners, bottle washing, liquid and powder detergents, food and beverage equipment cleaning, metalworking fluids and water treatments. DOWFAX™ 20A42 Nonionic Surfactant complies with EEC directive 82/242/EEC, which governs surfactants use in detergents. Additionally, its aquatic toxicity is greater than 1 mg/L.

DOWFAX™ 20A42 Nonionic Surfactant makes an efficient foam control agent in aqueous environments due to its low foam characteristic and limited water solubility. Typical applications include defoaming in food processing, paper production, metal degreasing and industrial cleaning operations.

**Table 1:**  
Typical Properties of DOWFAX™ 20A42 Nonionic Surfactant

Property	Unit	Typical Value	Test Method <sup>1</sup>
Viscosity @ 25°C	cSt	52	ASTM D 445 / D 446
Cloud Point, 1% Aqueous	°C	< 4	ASTM D 2024
Cloud Point, 10% Aqueous	°C	< 4	ASTM D 2024
Cloud Point, 10% Solvent <sup>2</sup>	°C	52	ASTM D 2024
Wetting time @ 25°C	sec	31.0	DIN 53901
Wetting time @ 70°C	sec	> 300	DIN 53901
Surface Tension <sup>3</sup>	mN/m	> 300	ASTM D 1331
Pour Point	°C	< -10	ASTM D 97
Specific Gravity (@ 25°C/25°C)	g/cm <sup>3</sup>	0.950	ASTM D 892

1. ASTM: American Society for Testing and Materials  
DIN: Deutsche Industrie Norm
2. 10% surfactant in a solution of 25% diethylene glycol butyl ether in water
3. Temperature 20°C, 1% surfactant in water

## Technical Expertise When and Where You Need It

Dow experts on DOWFAX™ Nonionic Surfactants are regionally located to quickly respond to your needs. They are globally networked to take maximum advantage of years of combined experience. Whether your question involves products, applications, or regulations, Dow offers comprehensive customer and technical service.

## Safe Use and Handling

DOWFAX™ 20A42 Nonionic Surfactant is easy to store and handle. For specific safe use and handling information, or to obtain a DOWFAX™ 20A42 Nonionic Surfactant Material Safety Data Sheet, contact your local Dow representative or please visit us at [www.dow.com](http://www.dow.com).

## **Product Stewardship**

Dow encourages its customers and potential users of DOWFAX™ 20A42 Nonionic Surfactant to review their applications from the standpoint of human health and environmental aspects. To help ensure that DOWFAX™ 20A42 Nonionic Surfactant is not used in ways for which it is not intended or tested, Dow personnel will assist customers in dealing with environmental and product safety considerations. Dow literature, including Safety Data Sheets, should be consulted prior to the use of DOWFAX™ 20A42 Nonionic Surfactant.

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