



## **METHYL GLUCOSIDE DERIVATIVES**

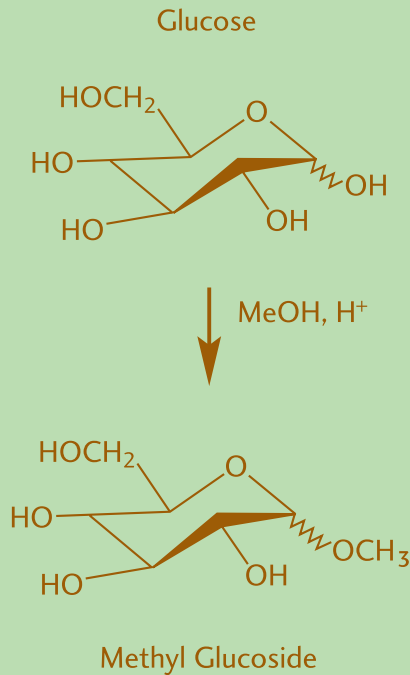
Naturally Derived, Mild & Safe  
and Functional

Formulate With Confidence™

**Lubrizol**

# NATURALLY DERIVED, MILD, SAFE AND FUNCTIONAL

## METHYL GLUCOSIDE BASIC CHEMISTRY



Making your formulation natural, safe and mild means selecting formulation ingredients that feature those characteristics. But suitable ingredient selections must also be functional, and thus ideally created from chemistry that is flexible enough to balance functional variants with naturalness, mildness and safety.

The methyl glucoside building block is prepared through methylation of glucose sourced from corn. This simple reaction is an ingenious technique for stabilizing natural sugar backbones, which are otherwise highly susceptible to carbonization and anhydriation.

The stabilized methyl glucoside backbone has multiple potential reaction sites, allowing for the creation of natural derivatives tailored for specific functionalities while maintaining the safety and mildness of glucose.

Lubrizol's methyl glucoside platform was designed to offer you natural, safe and mild formulating options with Glucamate™ thickeners, Glucam™ and Glucquat™ humectants, Glucate™ and Glucamate™ emulsifiers and Glucam™ P-20 Distearate emollient.

## METHYL GLUCOSIDE DERIVATIVES: Natural, Mild, Safe & Functional

THICKENERS	EMULSIFIERS	HUMECTANTS	EMOLLIENT
<p><b>Glucamate™ DOE-120</b> PEG-120 Methyl Glucose Dioleate</p> <p><b>Glucamate™ DOE-120 Syrup</b> PEG-120 Methyl Glucose Dioleate</p> <p><b>Glucamate™ LT</b> PEG-120 Methyl Glucose Trioleate (and) Propylene Glycol (and) Water</p> <p><b>NEW! Glucamate™ VLT</b> PEG-120 Methyl Glucose Trioleate (and) Propanediol</p>	<p><b>Glucate™ DO</b> Methyl Glucose Dioleate</p> <p><b>Glucamate™ SSE-20</b> PEG-20 Methyl Glucose Sesquistearate</p> <p><b>Glucate™ SS</b> Methyl Glucose Sesquistearate</p>	<p><b>Glucam™ E-10</b> Methyl Gluceth-10</p> <p><b>Glucam™ E-20</b> Methyl Gluceth-20</p> <p><b>Glucam™ P-10</b> PPG-10 Methyl Glucose Ether</p> <p><b>Glucam™ P-20</b> PPG-20 Methyl Glucose Ether</p> <p><b>Glucquat™ 125</b> Lauryl Methyl Gluceth-10 Hydroxypropyldimonium Chloride</p>	<p><b>Glucam™ P-20 Distearate</b> PPG-20 Methyl Glucose Ether Distearate</p>



# THICKENERS

## GLUCAMATE™ THICKENERS

Glucamate™ DOE-120, DOE-120 syrup, LT and new VLT thickeners can be classified as Gemini surfactants. Gemini surfactants are surfactant molecules possessing more than one hydrophobic tail and hydrophilic head group. These surfactants typically have better surface-active properties than corresponding conventional surfactants of equal chain length.



Above is the schematic representation of a Gemini surfactant. For the Glucamate™ thickeners, the spacer represents the methyl glucoside portion of the molecule, the "ion" is the ethylene oxide group, and the tail is the oleic group.

### Benefits of Glucamate™ Thickeners

**Naturally Derived.** The methyl glucoside portion of Glucamate™ thickeners is derived from corn, a natural and renewable source. The hydrophobic oleate portion is also derived from vegetable sources.

**Mildness.** Tender skin needs extra special care. But many surfactants commonly used to formulate baby and elder care products can irritate the skin. Glucamate™ thickeners interact with surfactant molecules through an associative mechanism, decreasing the irritancy of the formulation while imparting a smooth, desirable rheology.

**Efficient Thickening.** With Glucamate™ thickeners viscosity can be achieved in cleansing formulations even at low usage levels. Thickener total solids concentrations of 0.25-0.75 wt% are recommended for sulfate based formulations, and 2.0-5.0 wt% for sulfate-free formulations.

**Synergistic Thickening with Salt & Betaines.** Too much salt in a formulation can increase the risk of irritation, and also increase the risk of "crashing" the system by overshooting the salt curve. Glucamate™ thickeners, when used in combination with salt, provide a synergistic viscosity response. This allows the formulator the freedom to include salt as a primary thickener, but at reduced levels so as to improve mildness and increase formulation control. Similarly, Glucamate™ thickeners provide a synergistic viscosity response with betaines.



**Lathering.** Glucamate™ thickeners show superior flash foam performance in cleansing systems when compared to cleansing systems containing alternate commercial thickeners.

**Light, Pleasant Afterfeel.** The natural oleate chemistry of Glucamate™ thickeners enhances application, improves product spreadability and provides an emollient afterfeel.

**Easy to Use.** Glucamate™ DOE-120 thickener can readily be dissolved in the aqueous portion of the surfactant-based formulation. For best results, Glucamate™ DOE-120 thickener should be dissolved at 70°C. Glucamate™ DOE-120 syrup, LT and VLT thickeners are liquid products which are cold processable, meaning that no heat or additional energy is required to dissolve these materials or create the association required for thickening. However, it is recommended that formulations containing Glucamate™ DOE-120 syrup, LT and VLT thickeners be heated to 70°C for enhanced performance.

# EMULSIFIERS AND HUMECTANTS

## GLUCATE™ AND GLUCAMATE™ EMULSIFIERS

Glucate™ and Glucamate™ emulsifiers are ideal for sensitive skin, and are distinguished by their mildness and multi-functional performance benefits. Designed to work together, the lipophilic Glucate™ SS emulsifier and the hydrophilic Glucamate™ SSE-20 emulsifier form a complementary pair for efficient oil-in-water (o/w) emulsification. Glucate™ DO emulsifier may be used as a water-in-oil (w/o) emulsifier.

### Benefits of Glucate™ and Glucamate™ Emulsifiers

- Derived from natural sources
- Extremely mild and safe for sensitive skin and eye care formulations
- Highly efficient, can emulsify at low usage level
- Forms low viscosity stable emulsions, perfect for milks, serums and sprayable formulations
- Light, satiny afterfeel

## GLUCAM™ AND GLUCQUAT™ HUMECTANTS

Glucam™ and Glucquat™ humectants deliver moisture to the skin without leaving behind a tacky residue. They are offered with different levels of hydrophilicity for different levels of humectancy and offer the following formulation benefits:

### LIGHTER SKINFEEL:

Higher humectancy with light and airy skinfeel

- Glucam™ E-10 Humectant
- Glucam™ E-20 Humectant
- Glucquat™ 125 Humectant

### HEAVIER SKINFEEL:

Fragrance fixation with heavier but non-greasy skinfeel and moderate humectancy

- Glucam™ P-10 Humectant
- Glucam™ P-20 Humectant



# EMOLLIENTS

## GLUCAM™ P-20 DISTEARATE EMOLLIENT

Glucam™ P-20 Distearate emollient is designed for skin care formulations to deliver safe, effective moisturization without a heavy, greasy skinfeel. It functions as an efficient barrier for reducing water loss from the stratum corneum, while still allowing for some transport of water. The slip qualities of Glucam™ P-20 Distearate emollient bring a lubricious feeling of elegance to products as they soothingly glide onto the skin, and continue to leave the skin feeling smooth.

### Benefits of Glucam™ P-20 Distearate Emollient

- Derived from natural sources
- Moisturization
- Occlusive with some breathability
- Extremely mild and safe for sensitive skin and eye care formulations
- Non-comedogenic
- Luxurious skinfeel



**Methyl Glucoside Derivatives:** Renewable, corn-based ingredients that function as emollients, humectants, emulsifiers and thickeners. In a wide range of personal care applications, methyl glucoside derivatives are a mild, economical and highly effective way to add premium feel, improved performance and enhanced elegance.

## FUNCTIONALITIES OF METHYL GLUCOSIDE DERIVATIVES

Product Name INCI Name	Thickeners	Humectants	Emollients	Moisturizers	Fragrance Fixatives	Conditioners	Solvents	Emulsifying Agents
<b>Glucam™ E-10 Humectant</b> Methyl Gluceth-10		■	□	□			□	
<b>Glucam™ E-20 Humectant</b> Methyl Gluceth-20		■	□	□			□	
<b>Glucam™ P-10 Humectant</b> PPG-10 Methyl Glucose Ether		■	□	□			□	
<b>Glucam™ P-20 Humectant</b> PPG-20 Methyl Glucose Ether		□	□	□	■			
<b>Glucam™ P-20 Distearate Emollient</b> PPG-20 Methyl Glucose Ether Distearate			■	■				
<b>Glucamate™ DOE-120 Thickener</b> PEG-120 Methyl Glucose Dioleate	■			□				
<b>Glucamate™ DOE-120 Syrup Thickener</b> PEG-120 Methyl Glucose Dioleate	■			□				
<b>Glucamate™ LT Thickener</b> PEG-120 Methyl Glucose Trioleate (and) Propylene Glycol (and) Water	■			□				
<b>NEW! Glucamate™ VLT Thickener</b> PEG-120 Methyl Glucose Trioleate (and) Propanediol	■			□				
<b>Glucamate™ SSE-20 Emulsifier</b> PEG-20 Methyl Glucose Sesquistearate							□	■
<b>Glucate™ DO Emulsifier</b> Methyl Glucose Dioleate			□	□			□	■
<b>Glucate™ SS Emulsifier</b> Methyl Glucose Sesquistearate				□				■
<b>Glucquat™ 125 Humectant</b> Lauryl Methyl Gluceth-10 Hydroxypropyldimonium Chloride		■		□		□		

Key: ■ = Primary Functionality □ = Secondary Functionality

## NATURAL INGREDIENTS: RECOMMENDED APPLICATIONS

Product Name	Hair Care			Skin Care					
	Shampoos	Conditioners	Styling Products	Emulsions	Gels	Oils	Hydroalcoholic Products	Sun Care	
Glucam™ E-10 Humectant	●	●	●	●	●		○		
Glucam™ E-20 Humectant	●	●	●	●			○	○	
Glucam™ P-10 Humectant	○	●	●	●	○	○	●		
Glucam™ P-20 Humectant	○	●	●	●	○	○	●		
Glucam™ P-20 Distearate Emollient				●					
Glucamate™ DOE-120 Thickener	●								
Glucamate™ DOE-120 Syrup Thickener	●								
Glucamate™ LT Thickener	●								
<b>NEW!</b> Glucamate™ VLT Thickener	●								
Glucamate™ SSE-20 Emulsifier				●	○			●	
Glucate™ DO Emulsifier			○	●		○			
Glucate™ SS Emulsifier			○	●		○		●	
Glucquat™ 125 Humectant	○	●	●	●	●		●		

### EXEMPLARY FORMULATIONS

Anti-Aging Eye Serum [CC-E0007(AP)]

All Night Shimmer: Sparkling Night Cream [B-0007B(EU)]

Aftershave Gel [M-0003(EU)]

Pampering Skin Conditioner [B-0052(LA)]

Gentle Natural Beauty Sensitive-Skin Lotion [B-0041]

Shampoo & Body Wash for Babies & Kids [CL-B0047(LA)]

Passion Fruit Jelly Body Scrub [CL-S0006(LA)]

Refreshing Sprayable Milk [B-0046(EU)]

Oasis Multiple Emulsion Facial Cream [F-0061(AP)]

Exquisite Hydrating Cream [B-0047(EU)]

Two-Phase Hair Detangler [CD-0019(LA)]

Fun 'n Foamy Children's Conditioning Shampoo [SH-0076]

Bubbly Baby Extra Mild Body Wash [CL-B0068]

Formulation details can be found at  
[www.lubrizon.com/personalcare/formulations](http://www.lubrizon.com/personalcare/formulations)



Personal Cleansing		Color Cosmetics					Other	
Shower Gels/ Liquid Soaps	Bar Soaps	Lipsticks	Liquid Makeup	Pressed Powders	Powder Products	Makeup Removers	AP/Deodorants	Shaving Products
●	●		●					○
●	●		●					○
○	●		○			○		●
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		●	○	○				
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Key: ● = Highly Recommended ○ = Recommended

## Formulate With Confidence™

Naturally-derived, exceptionally versatile, and extremely efficient, Methyl Glucoside Derivatives are the choice for the discriminating formulator. Whether formulating for grandparent, for baby, or any sensitive skin consumer in between, Methyl Glucoside Derivatives provide the ideal sensory experience from a renewable source. These corn-based ingredients function as efficient thickeners, emulsifiers, humectants and emollients in a wide range of personal care applications, while imparting premium feel. Experience enhanced elegance and effective performance. Naturally.

**Lubrizol**

## Formulate With Confidence™

### North America

Lubrizol Advanced Materials, Inc.  
9911 Brecksville Road  
Cleveland, OH 44141-3247  
TEL: 216.447.5000  
TEL: 800.379.5389  
FAX: 216.447.5250

### Mexico

Lubrizol de Mexico, S.A. de C.V.  
Montes Urales 215  
Lomas de Chapultepec,  
Delegación Miguel Hidalgo,  
México, D.F. 11000  
TEL: 52.55.3067.0860  
FAX: 52.55.5870.8956

### Brazil

Lubrizol do Brasil Aditivos, Ltda.  
Av. Fagundes Filho  
134 - Cj. 101, 10th Floor  
Edifício Victoria Office Center  
São Judas, 04304-010 São Paulo  
TEL: 55.11.4082.1330  
FAX: 55.11.4082.1345

### Europe

Lubrizol Advanced Materials Europe BVBA  
Chaussée de Wavre, 1945  
B-1160 Brussels,  
Belgium  
TEL: 32.2.678.19.11  
FAX: 32.2.678.20.02

### Asia Pacific

Lubrizol Advanced Materials Asia Pacific Limited  
1107-1110 Shui On Centre  
6-8 Harbour Road  
Wanchai, Hong Kong  
TEL: 852.2508.1021  
FAX: 852.2512.2241

Lubrizol Specialty Chemicals (Shanghai) Co., Ltd.  
10F Park Center International  
1088 Fang Dian Road  
Pudong District, Shanghai, PRC 201204  
TEL: 86.21.3866.0366  
FAX: 86.21.5887.6977

### India

Lubrizol Advanced Materials India Private Limited  
501 Omega  
Hiranandani Business Park  
Powai  
Mumbai 400 076 India  
TEL: 91.22.6698.0590  
TEL: 91.22.6698.0591  
FAX: 91.22.6698.0599

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