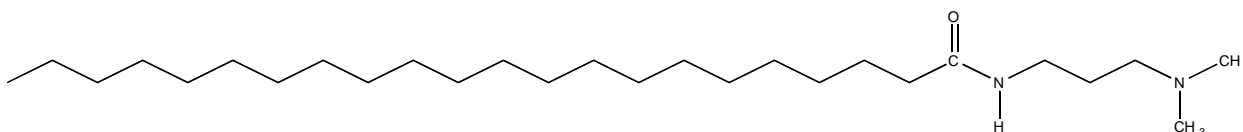


Macat[®] BD



Behenamidopropyl Dimethylamine

Overview

MACAT BD is a 100% active, pastillated Behenamidopropyl Dimethylamine. BD offers superior conditioning performance with environmental acceptance not found in traditional cationic quat based surfactants. Earning an **Eco-Friendly** label with high biodegradability and low aquatic toxicology, BD offers World Class performance and acceptance.

Eco-Friendly



With over 35 years Specialty Chemicals manufacturing experience and using the highest quality raw materials, MACAT BD is characteristically low color, low odor and reliably consistent batch to batch for the Personal Care Market.

MACAT BD is based on the naturally derived primary lipid found on hair surfaces, making it a uniquely natural compliment for use in hair conditioners and rinses, skin creams and lotions. BD imparts smooth detangling, improves dry comb and fly away, while leaving a soft powdery afterfeel. The conditioning advantages of behenyl (C₂₂) based materials is well known, when compared to less hydrophobic materials such as cetyl (C₁₆) or stearyl (C₁₈). MACAT BD allows the formulator the advantages of behenyl based conditioning performance with an Eco-Friendly profile. Choose formulation properties with neutralizing agent, such as lactic acid (lactate) for extra conditioning and split-end control, or behenic acid (behenate) for enhanced emulsification performance.

INCI Name: Behenamidopropyl Dimethylamine

CAS/EINECS#: 60270-33-9/262-134-8

Typical Properties

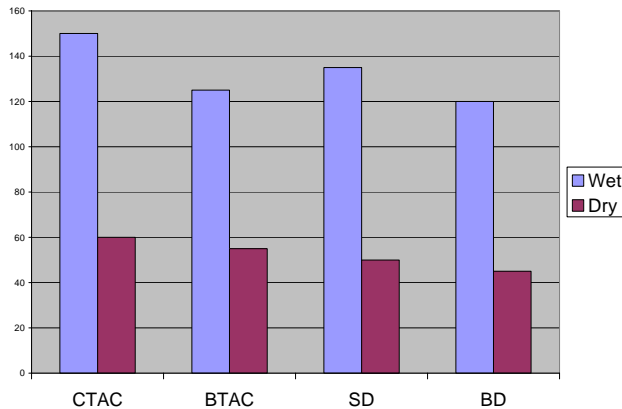
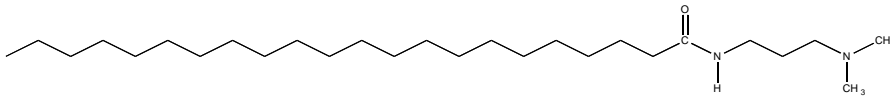
Water solubility	Dispersible (Soluble when neutralized)
Physical form	Pastilles
Color (Gardner)	5 Maximum
Total Amine Value (mgKOH/g).....	128-136
Acid Value (mgKOH/g).....	4.0 Maximum
Water, %.....	0.5 Maximum
Viscosity (80°C).....	<100 cps
Melting Point	75-81°C /167-178°F
pH (5% IPA)	6.0-8.0

Handling Information

Refer to the Material Safety Data Sheet (MSDS) available from Mason Chemical Company for information on the safe use, handling and disposal of this product.

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Macat® BD



Combing Force

Combing Force data summarized on the left illustrate the advantages of Macat BD over related materials (SD-Stearyl C₁₈ amidopropyl Dimethylamine) and traditional quat based conditioning agents (CTAC-Cetrimonium C₁₆ chloride, BTAC-Behentrimonium C₂₂ chloride) in wet and dry comb performance.

(Instron 5543, 500 mm/min, Natural hair tress, 1.5% active material/3% cetearyl alcohol, neutralized with lactic acid.)

MACAT BD can be successfully formulated into Clear Conditioning Shampoo formulations for detangling and fly-away control:

Clear Conditioning Shampoos

Ingredients:	Wt.%	
	A	B
Water	to 100.0	to 100.0
Sodium laureth-2 sulfate (28%)	8.5	10.0
Macat LH	3.0	-
Masurf G-2C	2.0	-
Macat Ultra CG	-	3.0
Masamide R-4	-	2.0
Macat BD	0.5	0.5
Viscosity@20°C	5,000cps	5,000cps
Cloud Point	-12°C	-12°C

Procedure:

Heat surfactant base (or component) to 60°C minimum, add MACAT BD, mixing until homogeneous.
Cool to ambient temperature, adjust pH, add fragrance, preservative.

Macat LH: Lauryl Hydroxysultaine
Masurf G-2C: Glycereth-2 Cocoate
Macat Ultra CG: Cocamidopropyl Betaine
Masamide R-4: PEG-4 Rapeseedamide



Eco-Friendly

To earn an Eco-Friendly designation, materials must demonstrate both high biodegradability >60%, and low Ecotoxicity >1mg/L for Fish, Daphnia and Algae.

Macat BD earns the Eco-Friendly designation by being readily biodegradable: >70% in 28 days (OECD 301), and exhibiting low Ecotoxicity: Fish LC₅₀(96 hours) >10mg/L (OECD 203), Daphnia EC₅₀(48 hours) >10mg/L (OECD 202), Algae IC₅₀(72 hours) >10mg/L (OECD 202).

Traditional quat based conditioning agents do not qualify for Eco-Friendly designation, being toxic to aquatic organisms (Ecotoxicity <1mg/L), and <60% biodegradable.

Regulatory Information: Macat BD complies with the requirements of the following chemical inventories: US (For FDA/Personal Care Products Use Only - INCI Name: Behenamidopropyl Dimethylamine), Canada (For Personal Care Products Use Only - INCI Name: Behenamidopropyl Dimethylamine), European Community Legislation: Directive 76/768/EEC. This substance is listed in Section I. This product contains no allergens according to the 7th Amendment to the Cosmetics Directive.
Japan (ENCS), Australia (AICS), Philippines (PICCS), ASIA-PAC.

See Material Safety Data Sheet for additional information.