



# Newsletter HomeCare 7/2021

Mackam® OIP 40:  
Superior Coupling Agent for HI&I Formulators

December 2021

## Octyliminodipropionate, sodium salt

A P-free hydrotrope suitable for middle to high level alkaline conditions. It fits well with neutral & synthetic alcohols based EO/PO block copolymer nonionic surfactants.

## Content

- Amphoteric Surfactants in General
- Superior Hydrotrope
  - Caustic Solubility
  - Coupling
- Product Details for Mackam® OIP 40

## Amphoteric Surfactants in General

Amphoteric surfactants are versatile surfactants that exhibit cationic behavior at acidic pH, anionic behavior at alkaline pH, and nonionic behavior within their isoelectric or zwitterion range. Amphoteric, also known as amphiphilic or zwitterionic surfactants, are generally used in combination with primary

surfactants such as sulfates or nonionics to improve foaming properties, thickening, and cleaning performance. Amphoteric surfactants are used in a variety of formulations and markets including HI&I, oilfield, and personal care.

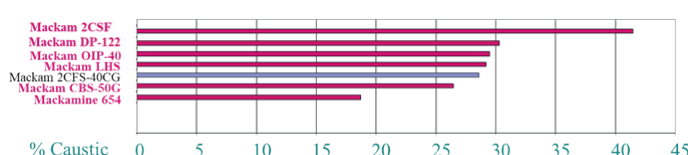
## Superior Hydrotrope

Mackam® OIP 40, sodium octyliminodipropionate, CAS Nr. 94441-92-6 is a very low foaming amphoteric with excellent alkaline & acid stability. This amphoteric is a highly effective hydrotrope and recommended for use in low foaming alkaline or acid cleaners. Exhibits corrosion inhibition properties and is brine and electrolyte stable. Approved for use as inert in non-food pesticide formulations.

Many Industrial and Institutional cleaners, such as automatic dishwashing detergents, bottle washing, limescale removers, etc. rely on high concentrations of acids, bases or builders for cleaning and detergency. Surfactants are necessary to provide wetting, penetration and surface tension reduction while being soluble in these “extreme” solution environments.

### Caustic Solubility

The solubility of surfactants was determined using a 1% active solution in DI water with varying amounts of caustic at 25°C. Products with greater caustic solubility can be used in high alkaline and high electrolyte formulations.



### Coupling

The coupling of surfactants into systems with alkaline builders is a critical property for hydrotropic surfactants. In order to evaluate and compare coupling properties of surfactants, a model formula was prepared and the temperature of the formulation was increased until the mixture became hazy. The cloud point for each formulation was recorded. Higher temperatures indicate more effective hydrotropes.

Hydrotrope, also referred to as Coupling is the ability of an ingredient to reduce the cloud point and/or reduce the tendency of ingredients to crystallize. Typically, hydrotropes will also reduce viscosity of isotropic solutions. Ingredients that have surfactants properties as well as hydrotrope properties offer multifunctionality and flexibility to formulators.

Active test surfactant	2,0%
Butoxyethanol	4,0%
C12-15 Alcohol – 7EO	2,0%
Sodium Hydroxide (50%)	10,0%
DI water	qs to 100,0%



## Product details for Mackam® OIP 40

### Identification

INCI Name:	SODIUM ETHYLHEXYLIMINODIPROPIONATE
CAS Number:	94441-92-6
EC Number:	305-318-6

### Specifications

Specifications	Results
Appearance @ 20°C	Clear Liquid
Colour Gardner @ 25°C	8 Max
Odour @ 25°C	Typical
Solids, (110°C Mettler), %	38.0 – 40.0
pH, as is @ 20°C	8.5 – 9.5

### Typical Properties

Specific Gravity, @ 25°C	1.07
--------------------------	------

### Standard Applications

Mackam® OIP 40 is a 40% active aqueous solution of low molecular weight salt-free amphoteric surfactant. It acts as an effective hydrotrope to couple nonionic surfactants into systems containing high levels of electrolyte. Mackam® OIP 40 is a low foaming product that provides good detergency in systems that require high cloud points. It is soluble in ethanolic and isopropanolic systems as well as water with good wetting contact angle reduction in these systems.

### Principal Uses

Dilutable All Purpose Cleaners	5 – 10%
Hard Surface Cleaners	1 – 2%
Car Wash Product	1 – 2%
Built Alkaline Cleaners	8 – 12%
Wax Stripper	3 – 5%
Heavy Duty Degreasers	8 – 10%
Hard Surface Cleaners	1 – 2%
Oven Cleaners	1 – 3%

### Standard Packaging

Mackam® OIP 40 is available in 200 kg drums and 1000 kg black IBC's. Alternative package sizes may be available upon request.

### Shelf Life

Mackam® OIP 40 has a shelf life of 730 days.

### Imprint

HARKE Chemicals GmbH  
Xantener Str. 1  
45479 Mülheim an der Ruhr  
Germany

Managing Directors:  
David Lupp  
Jens Prinssen  
Yuvaraj Govinda Pillai

### Picture credits

©iStockphoto / Artist's name: Savushkin