

Sulfurized Fatty Acid Ester (GDT321H)

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GDT321H (CAS No. 68390-93-2) is a low-odor, active sulfur-containing extreme pressure (EP) additive belonging to the sulfurized fatty acid ester family. It features an excellent combination of low viscosity, high flash point, and low pour point, while providing controlled sulfur release and maintaining continuous, stable reactivity over a wide temperature range.

GDT321H is specifically designed for medium- to heavy-duty metalworking operations and low-viscosity metalworking fluids. It is particularly suitable for applications such as deep-hole drilling oils, honing oils, broaching oils, and grinding oils, where viscosity, penetration, and cooling performance are critical. The product exhibits excellent compatibility with a wide range of additives, including synthetic esters and anti-wear agents, and demonstrates outstanding solubility in various base oils.



Product Features

Excellent Extreme Pressure Performance

The sulfur content is higher than 17%, and the product features outstanding extreme pressure (EP) properties.

High Active Sulfur Content

Containing approximately 8% active sulfur, GDT321H rapidly forms an extreme pressure lubricating film at the metalworking interface, providing reliable boundary lubrication protection.

Low Odor

Unlike conventional sulfurized additives, GDT321H has a mild odor, significantly improving the working environment for operators.

High Flash Point

With an open-cup flash point of approximately 180°C, the product offers excellent safety characteristics under high-temperature machining conditions and minimizes volatilization losses.

Low Viscosity

Excellent fluidity and penetration make it particularly suitable for deep-hole drilling, honing, and other operations requiring rapid penetration and efficient cooling

Light Color

The product is brown in appearance but lighter in color than many comparable sulfurized additives, enabling the formulation of lighter-colored metalworking oils and facilitating observation during machining operations.

Outstanding Solubility

GDT321H exhibits excellent compatibility and miscibility with mineral oils, synthetic base oils, and a wide range of commonly used additive components, providing maximum formulation flexibility.

Applications

Suitable for medium- to heavy-duty machining operations

and low-viscosity metalworking fluids, including:

- Deep-hole drilling oils
- Honing oils
- Broaching oils
- Grinding oils

Packaging and Storage

Packaging: Available in 200 L steel drums and 1,000 L IBC containers.

Storage: Store in a dry, well-ventilated area at ambient temperature, protected from direct sunlight. Use opaque or light-shielding containers whenever possible.

Shelf Life

When stored under the recommended conditions specified in this Technical Data Sheet, the product remains stable for 12 months from the date of manufacture.

Safety Information

Before handling, storing, or transporting this product, please carefully read and comply with all health, safety, and environmental requirements provided in the applicable Safety Data Sheet (SDS).

Technical Requirements

Item		Specification	Test Method
Appearance:		Brown Liquid	Visual
Color, ASTM:	≤	4	ASTMD1500
Water Content, % (v/v):	≤	0.03	GB/T260-2016
Mechanical Impurities %:	≤	0.05	GB/T511-2010
Flash Point (COC) °C :	≥	180	GB/T3536-2008
Kinematic Viscosity (40°C) mm²/s :	≥	45	GB/T265
Density (20°C) kg/m³	≤	1.101	GB/T13377-2010
Oil Solubility:		Clear, No Sediment	Visual ¹
Active Sulfur, %	≤	8	SH/T 0194-92
Sulfur Content % (m/m)	≥	17	GB/T17040-2019 ²
1、 A blend consisting of 5 wt% GDT321H sulfurized fatty acid ester and 95 wt% base oil shall remain clear and free of sediment after thorough mixing at room temperature (20°C). 2、 Sulfur content may be determined by GB/T 17040 or by other equivalent analytical methods.			