

# NUSOL® 21 ULTRA HIGH OIL

METAL WORKING FLUIDS  
Technical Data Sheet

## HYBRID TECHNOLOGY METALWORKING FLUID: GENERAL USE FOR ALL METALS

### PRODUCT DESCRIPTION

**NuSol® 21 Ultra High Oil** is a completely new technology that Chemtool Incorporated has introduced to the metalworking industry for the general machining of ferrous and non-ferrous metals. **NuSol® 21 Ultra High Oil** is formulated for today's competitive manufacturing environment which demands one fluid for all general machining operations. This includes cast iron, carbon and tool steels and aluminum alloys and tough exotic ferrous alloys.

**NuSol® 21 Ultra High Oil** is manufactured using a proprietary blending process that incorporates into the product many unique characteristics that will promote high productivity rates and minimal downtime for the end user.

**NuSol® 21 Ultra High Oil** is formulated using a blend of unique preformed emulsions that possess a very small particle size (average particle size of one micron) which demonstrate outstanding boundary lubrication. This small particle size provides a very durable and uniform lubricant film for enhanced wetting and coverage, a very clean running fluid and exceptional hard water stability for enhanced general machining performance on all metals.

**NuSol® 21 Ultra High Oil** preformed emulsions are further complemented with the presence of a balanced ester lubrication package that offers enhanced boundary lubrication and fluid detergency and cleanliness. NuSol hybrid fluid technologies are the perfect solution for the challenging manufacturing technologies required for both the local and global marketplaces.

### FEATURED BENEFITS

- Resistant to "Monday Morning Odors." Inherent biostable chemistry maintains pH and alkalinity; eliminating odors.
- Excellent corrosion protection for tooling equipment, and parts.
- Exceptional lubricant film strength for good tool life and finish.
- Extremely small particle size for superior wetting.
- Hard water stable
- High degree of cleanliness.
- Low VOC of 27.9 g/l.
- Good overall lubrication for general machining on both ferrous and non-ferrous metals.
- Rejects tramp oil.
- Higher viscosity oils offer improved boundary lubrication without heavy oil content limiting coolant carry-off and providing a cleaner machine interior.
- High flash point oils eliminate mist and evaporation that reduces coolant cost and promotes a healthy work environment.
- Proven history of being operator safe.
- Tramp oil rejection eliminates a source for bacteria and rancid odors that reduces sump change outs, disposal costs, and machine downtime.
- Triazine and formaldehyde free

### PRODUCT APPLICATION



### COMPATIBLE METALS

Carbon Steel  
Tool Steel  
Stainless Steel  
Aluminum  
Titanium  
Inconel  
Bronze  
Copper  
Brass

### MACHINING CAPABILITIES

Milling  
Turning  
Sawing  
Drilling  
Reaming  
Tapping  
OD/ID/Centerless Grinding  
Burnishing  
Light Duty Hobbing & Broaching  
Medium-Duty Stamping & Drawing

### HIGH PRESSURE COOLANT CAPABILITY

No

### ALL METAL SAFE

Yes

### REFRACT INDEX

2.9

# NUSOL® 21 ULTRA HIGH OIL

## PRODUCT SPECIFICATIONS

Fluid Type	Hybrid metalworking fluid
Appearance	White, translucent emulsion
Odor	Mild
Specific Gravity, 60°F (15.6°C)	1.01
Weight, lb/gal., 60°F (15.6°C)	8.35
pH (concentrate)	9.8
pH (10% dilution)	9.3
Biostability	Excellent

## PRODUCT APPLICATION / USAGE

NuSol® 21 Ultra High Oil is recommended for general purpose machining of ferrous and aluminum alloys. NuSol 21® Ultra High Oil is also recommended for cutting saw and band saw applications. NuSol® 21 Ultra High Oil is an excellent replacement for older soluble oil applications.

Operation	Carbon Steels, Cast Iron Alloys	Stainless Steel Alloys	Aluminum Alloys
Milling, Drilling, Turning	6 – 8%	8 – 12%	8 – 15%
Reaming, Light Duty Broaching, Milling, Tapping, Sawing	7 – 10%	9 -15%	9 – 15%
Grinding: I.D., O.D.	6 – 7%	6 – 10%	8 – 12%

## MIXING DATA

NuSol® 21 Ultra High Oil metalworking fluid is to be mixed with water for use. Always add product concentrate to the water, not water to product concentrate. Add with mild agitation. Product concentration can easily be monitored by refractometer.

Concentration	15.5%	12.4%	9.3%	6.2%	3.1%
Refractometer Reading	5.0	4.0	3.0	2.0	1.0

## AVAILABILITY

275 Gallon Tote	2704300000-CT2D51
55 Gallon Drum	2704300000-CT3990
5 Gallon Pail	2704300000-CT5990
Bulk Quantity	

## HEALTH AND SAFETY

For health and safety guidance, please refer to the Chemtool SDS (Safety Data Sheets).



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