

# Product Information

## Specialty Lubricants

# Dow Corning® M Gear Oil Additive

## FEATURES

- High load-carrying capacity at slow speeds
- Compatible with most gear oils
- Resists foaming

## BENEFITS

- Gears – Addition to oil-lubricated gears may provide:
  - Smoother surface finish of new or reworked gear sets following critical run-in
  - Healing of tooth surface damage with resultant reduction of pitting and wear debris (Figures 1 and 2)
  - Lower operating temperature, noise level and power usage due to reduction of friction
  - Longer service life of gear sets
- Bearings – Addition to oil-lubricated plain bearings may help:
  - Minimize wear at slow speeds and extreme pressures, especially during start-ups and under shock loading and vibration
- Machine Tools – Addition to the oil reservoir may:
  - Minimize stick-slip
  - Promote smooth action
- Metalworking – Addition to metalworking fluids and cutting oils may:
  - Increase tool life by lowering friction and heat and metal pick-up on work-contact areas
  - Reduce force required and improve the cutting action
  - Produce better surface finish

## COMPOSITION

- Dispersion of molybdenum disulfide in mineral oil

## Extreme pressure lubrication additive for petroleum oils

### USES

*Dow Corning*® M Gear Oil Additive is primarily designed as an extreme-pressure lubrication additive for petroleum oils. Typical applications include

- Gears – Gears at slow speeds and extreme pressures.
- Bearings – Oil-lubricated plane bearings.
- Machine tools – Added to oil reservoir for machine ways, slides, screws, servo mechanisms, transmissions and power-feed systems. (For non-oil-lubricated components, use *Dow Corning*® G-n Metal Assembly Paste or Spray.)
- Metalworking – Useful in such operations as broaching, gear hobbing, drilling, tapping, cutting, stamping, punching, drawing, thread rolling and cold heading.

### TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

Standard	Test	Unit	Result
	Physical Form		Liquid
	Specific Gravity at 25°C (77°F)		0.90
ASTM D 92	Flash Point, open cup	°C (°F)	223 (433)
ASTM D 88	Viscosity at 38°C (100°F)	Saybolt seconds	276
ASTM D 88	Viscosity at 99°C (210°F)	Saybolt seconds	55
ASTM D 97	Pour Point	°C (°F)	-29 (-20)
ASTM D 972	Evaporation after 22 hours at 99°C (210°F)	percent	0

Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call (517) 496-6000.

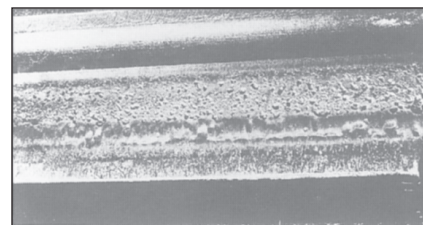


Figure 1. Tooth flank of large steel rolling mill gear shows conspicuous seizure marks and heavy pitting before the addition of Dow Corning M Gear Oil Additive.

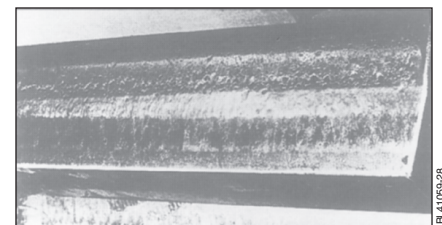


Figure 2. Same gear tooth flank, 16 months after addition of 10 percent by volume Dow Corning M Gear Oil Additive, shows the surface has become noticeably smoother.

## DESCRIPTION

*Dow Corning* M Gear Oil Additive is a stable dispersion of molybdenum disulfide, along with other extreme-pressure and anti-wear additives, in a premium-grade mineral oil. Other additives improve resistance to foaming, high-temperature oxidation and enhance the product's corrosion-preventative properties.

*Dow Corning* M Gear Oil Additive is compatible with most gear oils and has little affect on their viscosity or oxidation stability.

## HOW TO USE

### Application Method

*Dow Corning* M Gear Oil Additive may be easily dispersed in most petroleum oils with little or no mixing. Its addition to gear oils containing phosphorous, sulfur and chlorine EP agents can result in significant improvement in the load-carrying capacity of the oil. Addition to oils containing lead naphthenate, however, will not show this effect to the same degree.

The solid lubricant particles in *Dow Corning* M Gear Oil Additive have an average size of 0.5 micron.

These solids will easily pass through most conventional oil filters that normally retain particles larger than 10 microns.

*Dow Corning* M Gear Oil Additive is designed for use with oils in spray, mist or wick-type lubrication systems, as well as in oil reservoirs supplying splash, flood or drip-feed lubrication.

### Recommended Concentrations

The optimum concentrations of *Dow Corning* M Gear Oil Additive as an additive to petroleum-based lubricants varies in different applications. The following guidelines are suggested:

**Gears** – 5 to 10 percent by volume, depending on loads, speeds and condition of equipment. For best running-in results, *Dow Corning* M Gear Oil Additive and *Dow Corning* G-n Metal Assembly Spray or *Dow Corning* G-n Metal Assembly Paste should be applied initially on the gear teeth before start-up.

**Machine Tools** – 3 to 10 percent by volume, depending on condition of equipment and loads on table ways.

**Cutting Fluids** – 3 to 10 percent by volume, depending on material being machined and its tendency to weld to cutting tools. In severe applications, such as heading, tapping or hobbing, *Dow Corning* M Gear Oil Additive may be used as supplied or only slightly diluted with oil.

## PACKAGING

*Dow Corning* M Gear Oil Additive is available in 1-qt/2-lb (0.9-L/0.9-kg) bottles, 5-gal/40-lb (18.9-L/18.1-kg) pails and 55-gal/440-lb (208-L/200-kg) drums. All weights, net.

## STORAGE AND SHELF LIFE

When stored below 32°C (90°F), *Dow Corning* M Gear Oil Additive has a shelf life of 60 months from date of manufacture.

## USE LIMITATIONS

*Dow Corning* M Gear Oil Additive is not recommended for addition to nonflammable or fire-resistant hydraulic fluids, or other synthetic fluids such as polyglycols, diesters or silicones.

*Dow Corning* M Gear Oil Additive should not be used in components that depend on friction for successful operation, such as friction clutches and certain gear reducers that incorporate friction-activated backstops to prevent gravity reversal in the event of power failure.

Experience has shown that excessive water contamination of oils containing *Dow Corning* M Gear Oil Additive can be detrimental to the dispersion and cause settling of the solid lubricant.

*Dow Corning* M Gear Oil Additive is not intended for addition to water-soluble cutting oils, although such applications have sometimes been successful.

This material is neither tested nor represented as suitable for medical or pharmaceutical uses.

### **SHIPPING LIMITATIONS**

None.

### **SAFE HANDLING INFORMATION**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY WRITING TO DOW CORNING CUSTOMER SERVICE, OR BY CALLING (517) 496-6000.

### **WARRANTY INFORMATION – PLEASE READ CAREFULLY**

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should

not be used in substitution for customer's tests to ensure that *Dow Corning*'s products are safe, effective, and fully satisfactory for the intended end use.

*Dow Corning*'s sole warranty is that the product will meet the *Dow Corning* sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. *Dow Corning* specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless *Dow Corning* provides you with a specific, duly signed endorsement of fitness for use, *Dow Corning* disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

