

**Industrial Additives Division
Coatings**

LAVIOSA ARGIMEL® GM

Rheological Additive for Greases and Lubricants

General Information

LAVIOSA ARGIMEL® GM is a high performing rheological additive, specifically tailored for greases and lubricants.

LAVIOSA ARGIMEL® GM is based on highly purified bentonite clay reacted with a quaternary ammonium salt through a cation exchange reaction and show high performance efficiency as thickening for medium to high viscosity index mineral oils, synthetic oils, and other organic fluids.

Table 1 Chemical-physical properties

Properties	Description
Composition	organically modified bentonite
Physical form	white fine powder
Bulk density	0,4-0,6 g/mL
Moisture	up to 3%

Applications

LAVIOSA ARGIMEL® GM is suitable for lubricating greases based on medium- to high- paraffinic oils, synthetic oils and other organic fluids offering rapid yield development, high gel strengths, and increased efficiency.

LAVIOSA ARGIMEL® GM is especially recommended to thicken high temperature greases because of its thermal stability.

Incorporation

LAVIOSA ARGIMEL® GM requires high shear forces applied, to reach the proper level of delamination of the organo-bentonite platelets. A chemical (polar) activator usage is recommended.

Table 2 Activators' dosage (based on Laviosa ARGIMEL® weight)

Polar activator	%
Acetone	33
Methanol/H ₂ O (95:5)	17
Propylene Carbonate	17
Ethanol/H ₂ O	17

To perform effectively, the grease formulation requires quite specific processing steps:

- 1) the organoclay platelets stack are subjected to wetting and de-agglomeration in the oil base.
- 2) high shear delamination and polar activation will develop optimal gel stability. The shear forces required for



proper dispersion must be produced by the equipment such as colloid mills or homogenizers. It is always recommended to empirically determine the proper level of addition with, because either defect or excess of chemical activator would result in a non-optimal rheology development.

While heat is not essential in most cases, processing temperatures above 20°C are preferred.

Several methods can be used to incorporate **LAVIOSA ARGIMEL® GM** in a lubricating oil:

1. The “*simple mix*” technique. **LAVIOSA ARGIMEL® GM** is added to the base oil and mixed till wet.
2. The “*cold concentrate*” technique. **LAVIOSA ARGIMEL® GM** is pre-gelled in a part of the base oil. After full activation, the rest of the oil and the other additives are

added to the concentrate and milled.

The high shear provided stabilizes the organoclay matrix which results in the desired grease consistency, which is measurable by penetration tests.

Dosage

Dosage strongly depends on the rheological properties needed, and on the base oil being used. A concentration loading study is recommended to optimize the level of addition.

Storage stability and packing

Product does not deteriorate significantly in 3 years. **LAVIOSA ARGIMEL® GM** should be stored in a dry, sheltered place in original closed bags.

Packing is available in 25 kg net paper bags

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