



Lubricants Report



Product Data Sheet from Shell Lubricants

PDS# 3.63.05

MALLEUS* TC LEAD FREE HIGH PRESSURE THREAD COMPOUND

PRODUCT LINE

Malleus TC is a new lead free thread compound for casing and tubing connections developed in response to concerns regarding worker health and protection of the environment. Advanced chemistry enables **Malleus TC** to meet or exceed the performance parameters of all seven tests specified in API. Bulletin 5A2 and is in tune with the environmental awareness of the 90's.

APPLICATIONS

There has been considerable interest on a global basis by both environmental and occupational health and safety groups to restrict the use of products containing lead and lead derivatives. Lead can create environmental hazards and as a result this metal has been eliminated from fuels, lubricating oils and greases and now, thread compounds.

Many of the common thread compounds contain powdered lead in concentration varying from 20 to 65% by weight. This metal has been preferred by compound manufacturers as it's ductility makes it ideal to cushion threads against severe vibrations and shocks associated with today's drilling applications. **Malleus TC** maintains and improves all characteristics of the older technology lead based compounds and provides added protection to your workers, your equipments and the environment.

Malleus TC is a field proven lead free thread compound that provides superior protection against seizures or gallings in tubing and casing connections used in a wide variety of applications. **Malleus TC** contains improved H₂S corrosion inhibitors and its superior thread sealing characteristics have been successfully pressure tested at 7500 p.s.i. Its ease of application makes lead free **Malleus TC** the perfect thread compound, year round.

Malleus TC is recommended for metallic tubulars having the FTPI. 8 Round, Buttress, LTC and EUE thread profiles and for any other general threading applications. Statistical field data has established a torque correction factor of 0.95.

PERFORMANCE BENEFITS

- **Lead Free**
 - **Malleus TC** responds to the concerns regarding your workers' health and the protection of the environment.
 - Permits its application in regulated or sensitive environments.
- **Protection against Seizure and Galling**
 - Meets or exceeds the performance parameters of all seven tests specified in FTPI. Bulletin 5A2 for superb thread protection.
- **Thread Sealing**
 - Pressure tested at 7500 p.s.i. for outstanding protection.
- **Corrosion Protection**
 - **Malleus TC** provides superior H₂S corrosion inhibitors over older compound formulations.
- **Brushing Ability**
 - **Malleus TC**'s ease of application makes it the ideal year round thread compound.

All features that translate into reduced costs and improved efficiency !

PHYSICAL PROPERTIES

PRODUCT CODE	504-598
Colour	Silver/Grey
Texture	Smooth
Specific Gravity	1.629 gm/c.c.
Composition	55% solids
Additives	H2S Corrosion Inhibitors

FTPI. 5A2 PERFORMANCE RESULTS

TEST	SPECIFICATION	FTPI. REQUIREMENT	MALLEUS TC
Penetration ASTM D217	Worked at 77°F/25°C Worked & Cooled to 0°F/-17.8°C	310 - 340 200	312 - 332 248
Dropping Point of Base	ASTM D566	190°F/87.8°C	570°F/298.9°C
Evaporation	As determined by FTPI. 24 hr. at 212°F/100°C	2.0	< 0.5%
Oil Separation	Nickel Filter Cone Percent weight loss	5.0 Max. after 24 hrs.	1.3%
Gas Evolution	c.c. collected after 120 hours at 150°F/65.6°C	20 c.c. Max.	In house test 1.45 c.c. 24 hrs. 2.10 c.c. 72 hrs. 2.20 c.c. 120 hrs.
Water Leaching	Percent weight loss after 2 hours at 150°F/65.6°C	5.0 Max.	2.7
Brushing Ability	As determined by FTPI.	Applicable at 0°F/-17.8°C	Applicable at -10°F/-23°C

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