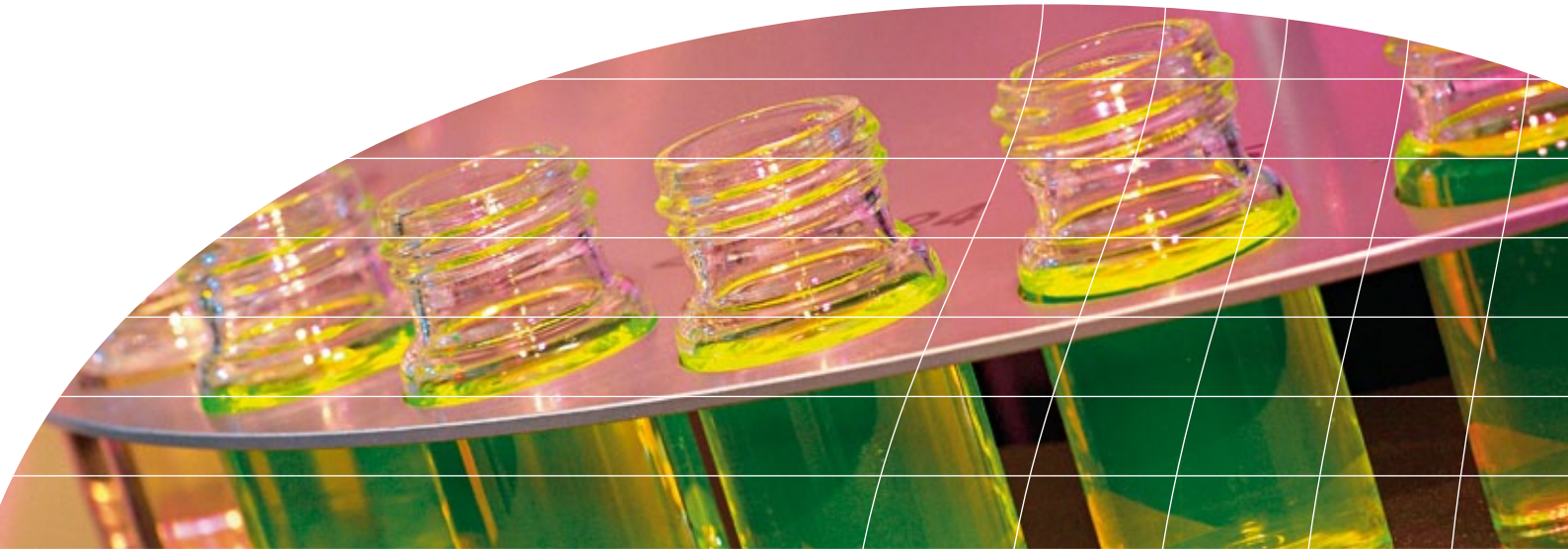


Coolants for the industry

SUPRA reduces the heat to improve your productivity



TOTAL



TOTAL

Organic technology based coolants

Large investments are needed for the purchase of high performance power generation equipment. To draw the best efficiency of your investment while protecting it, you need to maintain its cooling systems in an excellent condition.

COOLELF SUPRA and GLACELF SUPRA, our premium quality coolants based on the latest organic technology will bring high performance and extended service life to your equipment, as well as reducing the overall maintenance costs.

■ Outstanding performance of the COOLELF SUPRA & GLACELF SUPRA:

- excellent heat transfer for the engine cooling,
- reinforced freezing and boiling protection,
- very high protection of the cylinders at high temperature,
- excellent protection of the engine materials against corrosion and cavitation,
- exceptional service-life of the coolant.

■ Your advantages:

- **protect** your investment over time
- **optimize** the performance of your equipment
- **save** on maintenance operations, downtime and waste management

ANAC COOLANT, coolant analysis service

Through sampling of in-service coolant, ANAC COOLANT provides:

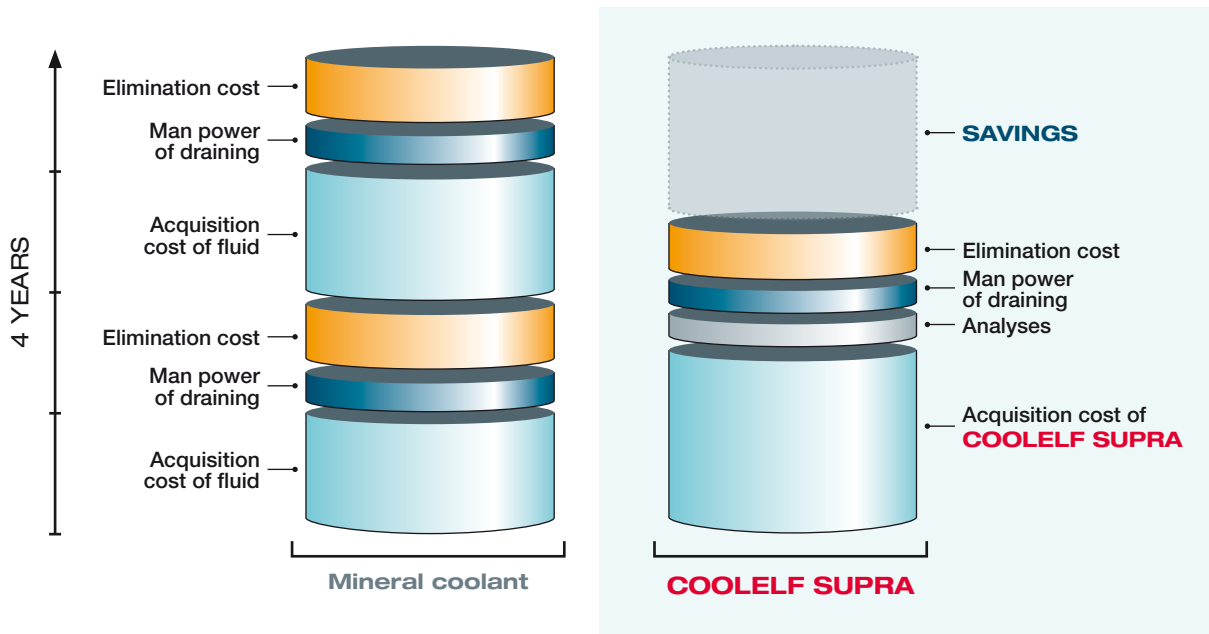
- **a complete diagnosis** of the condition of the coolant
- **recommendations** on maintenance and draining, to optimize the operating conditions of your equipment

ANAC COOLANT analysis service enables you to enhance both reliability and service life of your equipment, leading to operation cost savings.

The proven performance

Bigger savings with better protection

COST SAVINGS



Proven experience of COOLELF SUPRA with our customers shows a possible extension of the coolant service life, provided that regular monitoring by analysis is performed.

ADVICE

Switching from a conventional mineral technology coolant to COOLELF SUPRA only requires a careful flushing of the concerned cooling system to remove any deposits present in the cooling system.

PROTECTION OF THE CYLINDERS

Liners after 400 hours of thermal shock tests on 6.2 L engine



Mineral coolant



COOLELF SUPRA

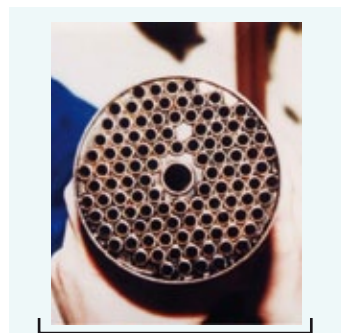
Excellent protection against cavitation

PROTECTION OF THE HEAT EXCHANGER TUBES

Results after 18 months on 4MW Wärtsilä SACM preheating circuit



Mineral coolant



COOLELF SUPRA

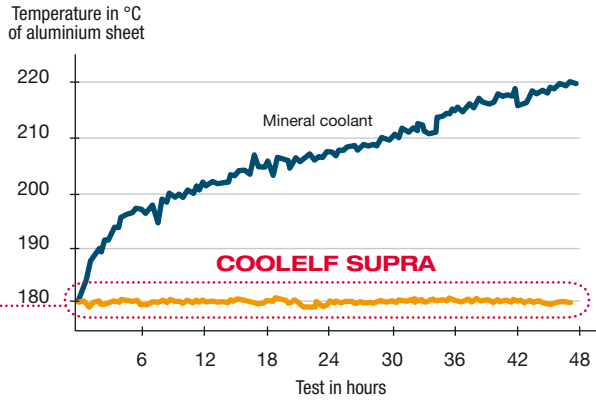
Absence of deposit with COOLELF SUPRA GF NP

BENCH TESTS AND ON-SITE OPERATION TESTS ON DIESEL AND GAS ENGINES SHOW THAT THE ORGANIC INHIBITORS USED IN THE SUPRA RANGE OF COOLANTS GIVE OPTIMAL RESULTS.

EXCELLENT HEAT TRANSFER CAPACITY

Results of the dynamic corrosion test ASTM 2570
48 hours - 122.5 W/cm²

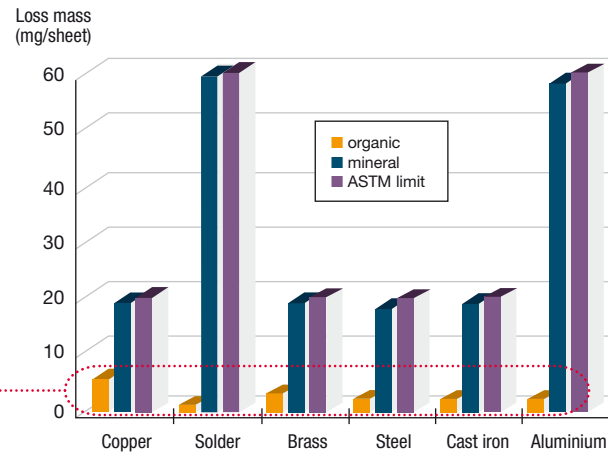
The temperature of the metal remains equal
ENGINE COOLING GUARANTEED



EXCELLENT PROTECTION AT HIGH TEMPERATURE

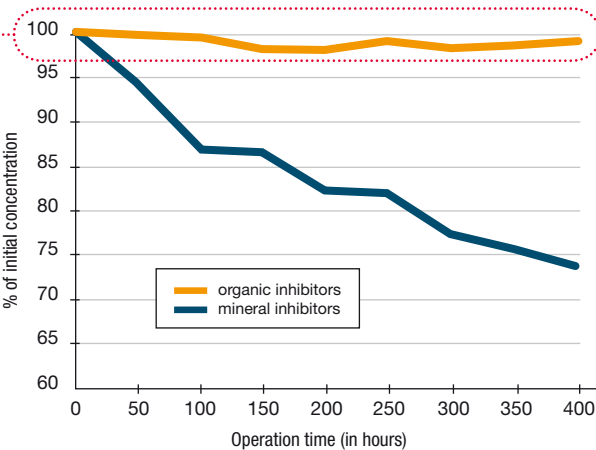
Results of the dynamic corrosion test ASTM 2570

Excellent results due to the strong anti-corrosion and anti-cavitation protection
PROTECTION OF THE CYLINDERS GUARANTEED



PRESERVATION OF INHIBITORS

The protection provided by coolelf supra product range is
MAINTAINED OVER TIME



OUR PRODUCT LINE FOR YOUR APPLICATIONS

ALL OUR PRODUCTS ARE MONOETHYLENE GLYCOL BASED, EXCEPT COOLELF/GLACELF MPG SUPRA (MONOPROPYLENE GLYCOL BASED). THEY ARE ENVIRONMENTALLY-FRIENDLY AND COMPATIBLE WITH ELASTOMERS AND PLASTICS.



Industrial application	Ready-mixed coolant	Concentrated antifreeze*	Specifications
Generator sets Gas-engines <hr/> Cogeneration power plants <hr/> Windmill generators <hr/> Railways locomotive diesel engines	COOLELF SUPRA Antifreeze protections: -26 °C	GLACELF SUPRA Antifreeze protection: -20 °C to -69 °C depending on % of dilution	<ul style="list-style-type: none"> • AFNOR NF R 15-601 • ASTM D 3306, D 4656, D 4985 • BS 6580 • SAE J 1034 • GE Jenbacher • Rolls-Royce • MTU • MWM
Nuclear power plants using safety generator sets <hr/> Low temperature regions	COOLELF SUPRA GF NP Antifreeze protection: -37 °C	-	<ul style="list-style-type: none"> • AFNOR NF R 15-601 • ASTM D 3306, D 4656, D 4985, D 5345 • BS 6580, BS 5117 • SAE J 1034 • MTU EDF PMUC approved
Warm temperature regions <hr/> Higher heat transfer capacity	COOLELF CHP SUPRA Antifreeze protection: -7 °C	GLACELF CHP SUPRA Antifreeze protection: -7 °C to -15 °C depending on % of dilution	<ul style="list-style-type: none"> • AFNOR NF R 15-601 • ASTM D 3306, D 4985 • BS 6580, BS 5117 • SAE J 1034 • GE Jenbacher • MWM
Pharmaceutical industries: combined generation/heating installations	COOLELF MPG SUPRA Antifreeze protection: -26 °C	GLACELF MPG SUPRA Antifreeze protection: -17 °C to -38 °C depending on % of dilution	COOLELF MPG SUPRA: <ul style="list-style-type: none"> • AFNOR NF R 15-601 • ASTM D 4656 • BS 6580 GLACELF MPG SUPRA: <ul style="list-style-type: none"> • AFNOR NF R 15-601 • ASTM D 3306
Additional products			
Diesel engines and gas engines requiring no antifreeze protection <hr/> Plastic and synthetic injection moulds	WT SUPRA Aqueous concentrate of specific organic corrosion and cavitation inhibitors		<ul style="list-style-type: none"> • Wärtsilä • MWM • Rolls-Royce

* Dilute the concentrate in 20 °f water (french hardness unit) before use.

4 good reasons for choosing TOTAL

A major company

Total Lubrificants is a subsidiary of Total. The Group is the world's fifth largest publicly-traded integrated international oil and gas company* and employs more than 96,000 people on five continents. Total Lubrificants produces and sells its products under the TOTAL brand in more than 150 countries.

Innovation

Major investments in R&D and close collaboration with equipment manufacturers have led Total Lubrificants to develop high added value products, and foresee your future needs.

Quality and environment

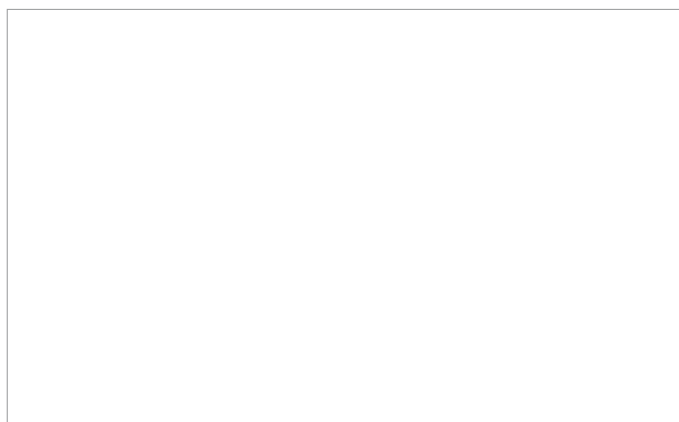
Total Lubrificants' ISO 9001 certification is the guarantee of a long-term commitment for quality. Our R&D teams integrate from the initial design stage of new products parameters conducive to the reduction of toxicity risks, the recycling or elimination of the products.

Partnership

We are at your side bringing our expertise to optimize the productivity of your machinery and reduce your maintenance costs. The large variety of our product ranges allows you to cover all your needs for coolants, maintenance and specialty lubricants.

** Based on market capitalization (in dollars) as of December 31, 2011*

Material Safety Data Sheets available at www.quickfds.com



www.lubricants.total.com/pro/industry.html



The right choice in lubricants

TOTAL