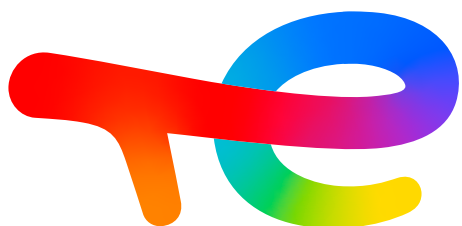


TotalEnergies Antifreeze and Coolant Product Ranges

Discover our premium range of antifreeze and coolants to provide the most suitable protection for your engine and extend the life of your vehicle.

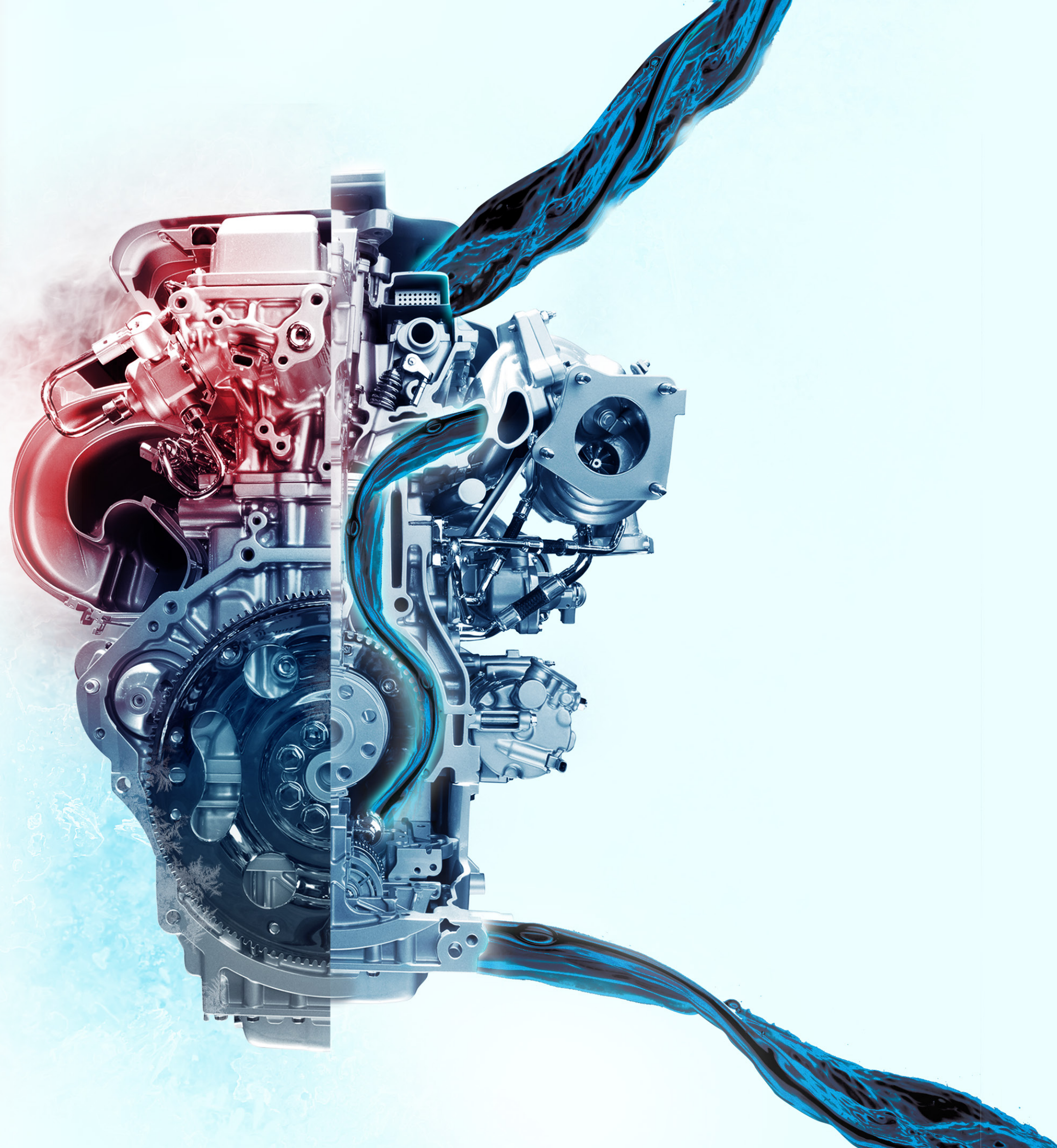


TotalEnergies



Summary

- 04 Coolants, a key component of your vehicle
- 07 TotalEnergies Coolants, our expertise in your products
- 10 TotalEnergies Lubrifiants, your trusted and professional partner
- 11 Premium Neotech Range
- 12 Premium Cartech Range
- 13 Premium Plus Evo Range
- 14 Our brand new EV Range
- 16 Specific Coolant Ranges



COOLANTS, A KEY COMPONENT of your vehicle

Cooling your engine system is mandatory to avoid any engine destruction

A coolant is necessary to protect all cooling systems materials against:



FREEZING

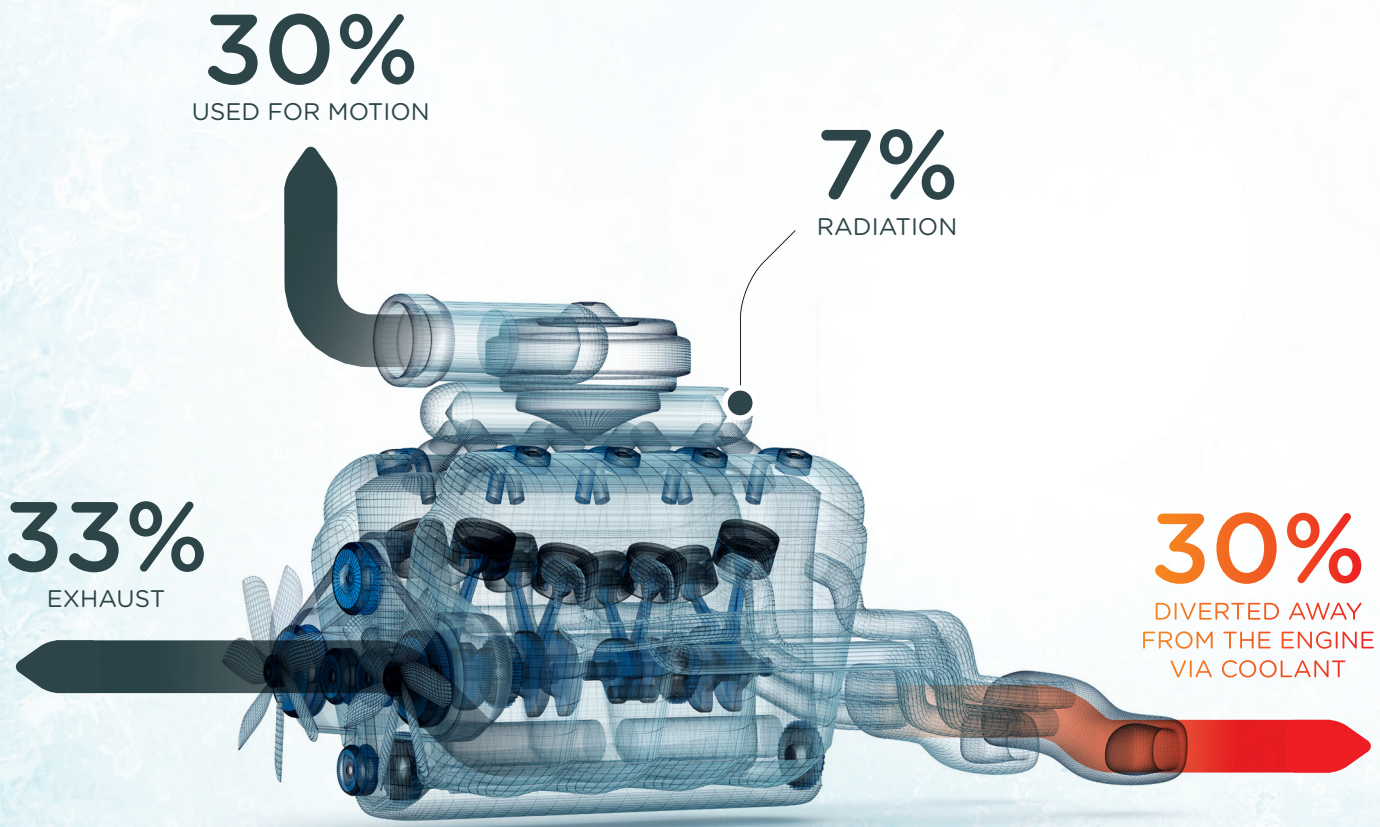


BOILING



CORROSION, EROSION, CAVITATION

By ensuring that excess heat is transferred away from the combustion process, the material of all cooling systems is protected.



Coolants help to avoid unnecessary expenses and extend the life of the engine

Vehicle maintenance is essential to ensure that your vehicle runs smoothly and lasts as long as possible. Coolant plays a particularly important role in ensuring that the engine is kept running properly. This is why it is important to use the right coolant to optimize the performance of your vehicle.

Saving on your engine coolant can have unpleasant and expensive consequences.



~ 500 US\$
Radiator



~ 600 US\$
Water Pump

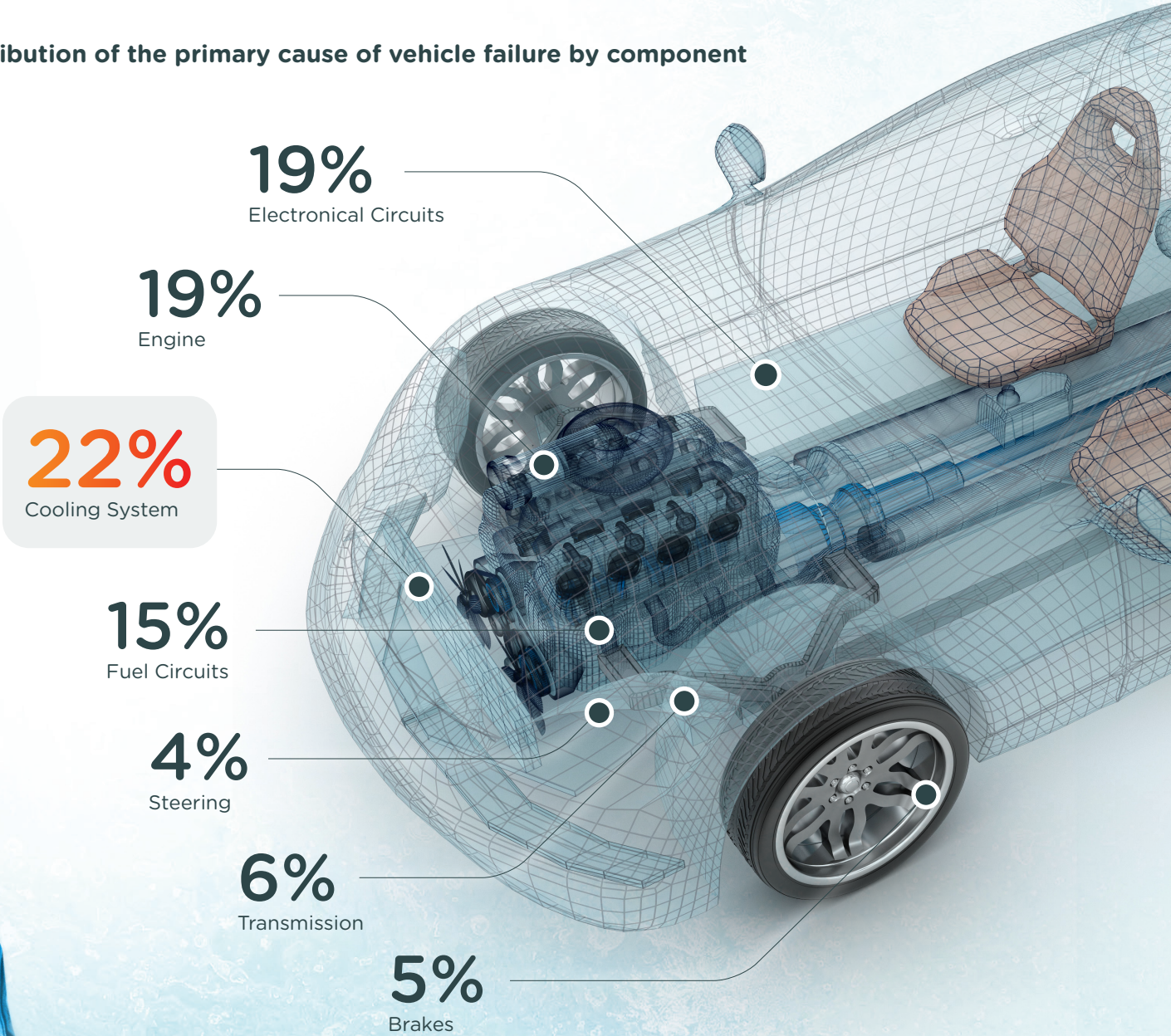


~ 2000 US\$
Head Gasket



More than 2500 US\$
Engine Block

Distribution of the primary cause of vehicle failure by component





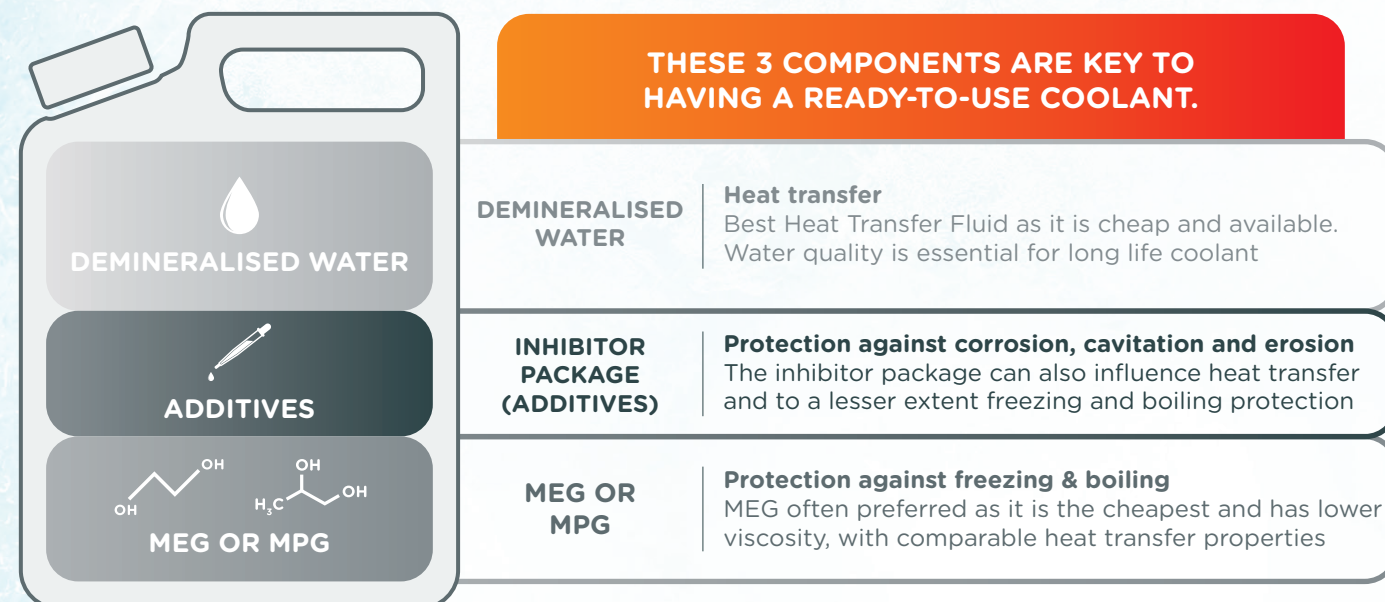
TOTALENERGIES COOLANTS, our expertise in your products

**Arteco, a 50% TotalEnergies Joint-Venture
as one of market leaders**

Development and manufacturing of high-quality antifreeze, coolants and heat transfer fluids

**To meet all your engine requirements,
choosing the right coolant is fundamental**

By understanding coolants composition

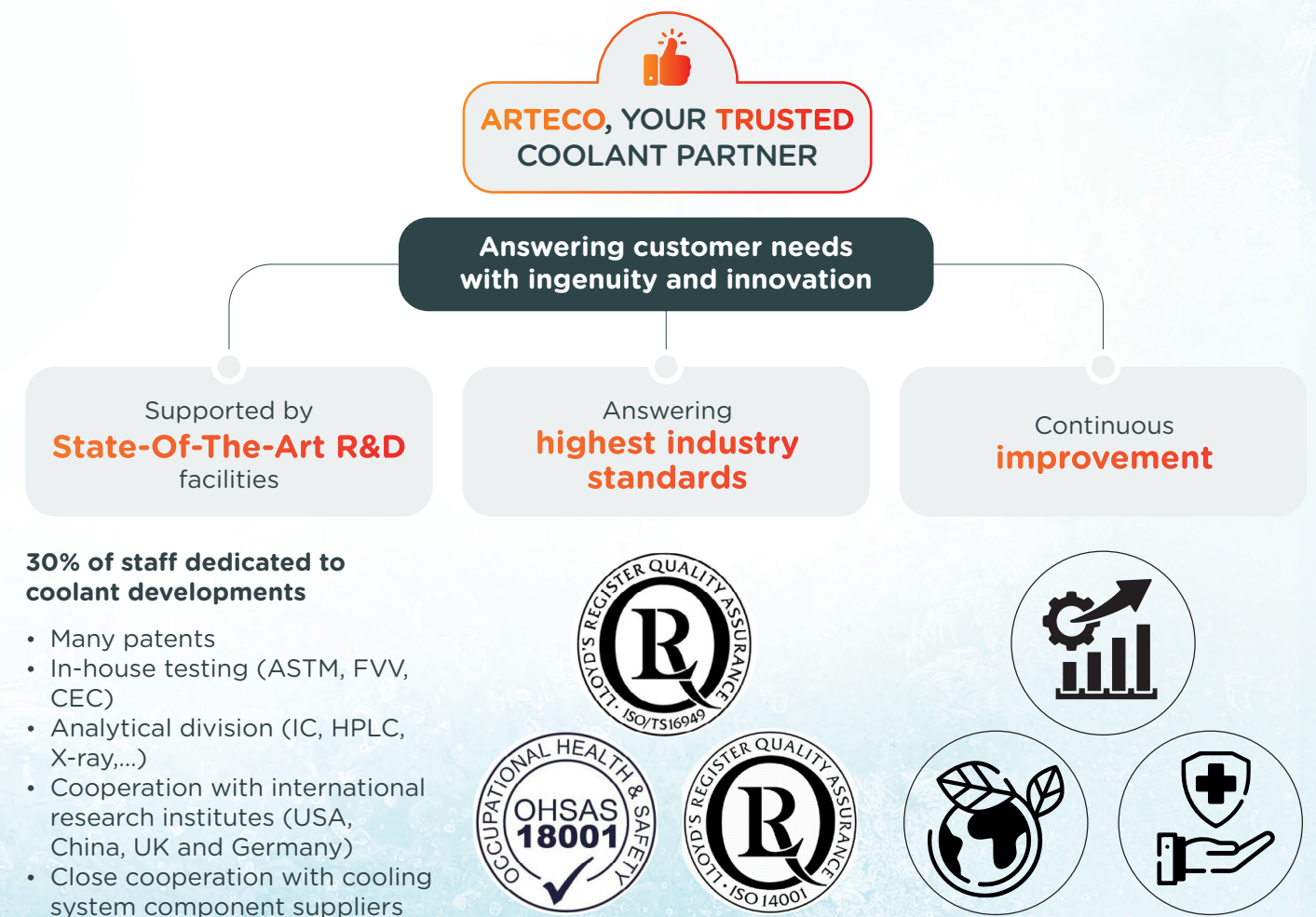


According to the composition, you may have to add some demineralised water to obtain the final product.



MEG: MONOETHYLENE GLYCOL
MPG: MONOPROPYLENE GLYCOL

| Proven to be effective with | |
|---|--|
| More than 40 years of coolant knowledge | Intensive tests meeting highest standards Arteco products are: Rigorously tested in fleets over 100 million kilometers, with 540 vehicles, both automotive and heavy-duty, demonstrating exceptional performance: <ul style="list-style-type: none"> • No compatibility problems with seals, hoses and plastic components. • Increased life time of coolant system components • Excellent cavitation protection and superior aluminium protection • Limited depletion rates |
| Unique technology development has been the foundation for joint venture set up, in 1998 | |
| Wide and premium portfolio, covering multiple applications | |



TotalEnergies LubAnac Coolant, our powerful and efficient diagnosis system

LubAnac Coolant: a dedicated **diagnosis system for the follow-up of cooling liquids and cooling systems**

LubAnac Coolant is recommended in the following cases:

- Systematic follow-up of coolant behavior
- Punctual analysis and diagnosis in specific cases like breakdown or expertise



Anac makes the difference:

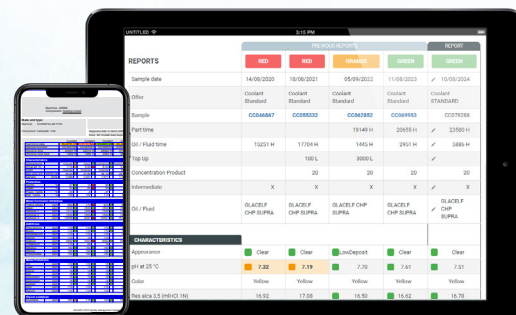
A **personalized interpretation** of the diagnoses.

Specific analysis
routine for mineral
and organic liquids.

A website allowing **user-friendly management** of the analysis data.

Results available via
e-mail, fax or via internet.

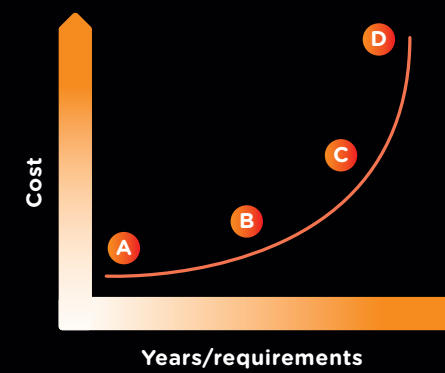
More than **30 years of experience** in coolant analyses.



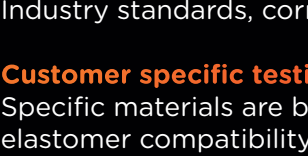
Strong cooperation between TotalEnergies and OEMs

- TotalEnergies is managing a **close cooperation with OEMs** and key component suppliers
- Specific testing demands **intensive** financial and time commitments
- 5 to 8 years is the typical time to launch a new coolant to the market

OEM approval process:



Graph: OEM approval process

- 
- A** **Standard testing lab:**
Industry standards, corrosion testing, elastomer testing
 - B** **Customer specific testing:**
Specific materials are being tested (corrosion and elastomer compatibility)
 - C** **Bench testing:**
Worst case scenario's
 - D** **Field testing:**
Actual fleet test in all kind of conditions to make a long term risk assessment

TOTALENERGIES LUBRIFIANTS, your trusted and professional partner

As part of TotalEnergies Lubrificants, our entire coolant and antifreeze ranges are aligned with our excellence and customer centric commitments.

A major player

With our production, supply chain and commercial presence in more than 160 countries, we deliver a full range of lubricants.

Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total Cost of Ownership.

References & OEMs

TotalEnergies Lubrificants cooperates with equipment manufacturers to create high-technology products for optimal performance and production of your machinery.

5

good reasons for choosing TotalEnergies Lubricants

Innovation & Research

TotalEnergies Lubrificants invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.

Quality and environment

TotalEnergies Lubrificants ISO 9001 and 14001 certifications are the guarantee of a long term commitment to quality and environment. From the initial design stage, our R&D teams seek to develop products that minimize toxicity risks and environmental impact.

Premium NEOTECH RANGE



Neotech Range

"The latest premium coolant range dedicated to heavy-duty engines"

OAT (Organic Additive Technology) premium coolant.

A very long-life premium engine coolant based on monoethylene glycol and Organic Additive Technology (OAT) that provides year-round frost and excellent corrosion, freeze and boil protection.

Mainly for **heavy-duty applications** (combustion engines, battery electric vehicles, gas engines)



ANTI-FREEZING



ANTI-CORROSION



ANTI-BOILING



| Approvals | | |
|--|---|--|
| International Specifications | OEMs Approvals | OEM's meets the requirements |
| <ul style="list-style-type: none">ASTM D3306-20ASTM D6210-17GB 27943.1-2022UNE 26 361 88/1JIS K2234-2018 | <ul style="list-style-type: none">VoithJaguar Land Rover STJLR.03.5212ClaasDeutz DQC CB-14 | <ul style="list-style-type: none">Volvo VCS-2Renault Trucks RTCS-2Caterpillar GCM34PerkinsKubotaUd TrucksJohn Deere Power SystemsCase New Holland Mat 3624Detroit DFS93K217TataIveco 18-1830Innio Jenbacher TA1000-0200 |

| Available packs | 1L | 5L | 20L | 60L | 208L | 1000L | BULK |
|------------------------------------|----|----|-----|-----|------|-------|------|
| Glacelf Neotech Concentrate | • | | • | • | • | • | • |
| Coolelf Neotech -26°C Ready to use | • | • | • | | • | • | • |
| Coolelf Neotech -37°C Ready to use | • | • | • | | • | • | • |



Free from potential harmful additives such as 2-EHA, nitrites, borates, amines leading to a safer environment. It is also compliant with EU CO₂ emission performance standards.

Premium
CARTECH RANGE



Cartech Range

“The latest premium passenger car coolants formulated for Stellantis, Renault-Nissan, Ford, Asian OEMs and many other manufacturers”

P-OAT (Phosphate - Organic Additive Technology) premium coolant.

A very long-life premium glycol-based engine coolants, which provides year-round frost and excellent corrosion, freeze and boil protection.


Mainly for **light vehicles** (combustion engines, battery electric vehicles)



| Approvals | | |
|---|--|--|
| International Specifications | OEMs Approvals | OEM's meets the requirements |
| <ul style="list-style-type: none">ASTM D3306-20ASTM D6210-17JIS K2234-2018KS M 2142:2014GB 29743-2013UNE 26-361-88/1GB 27943.1-2022 | <ul style="list-style-type: none">RNES-B-00014 v2.1*RN 41-01-001 -V*Renault RTCS-EMB 325.7Alpine | <ul style="list-style-type: none">PSA B 71 1111Stellantis MS.50203FordWSS-M97B57-A1Fiat 9.55523OpelVauxhallMahindra |

*Except for B4A and B4D engines.

| Available packs | 1L | 5L | 20L | 60L | 208L | 1000L | BULK |
|------------------------------------|----|----|-----|-----|------|-------|------|
| Glacelf Cartech Concentrate | ● | ● | ● | ● | ● | ● | ● |
| Coolelf Cartech -26°C Ready to use | ● | ● | ● | | ● | ● | ● |
| Coolelf Cartech -37°C Ready to use | ● | ● | ● | | ● | ● | ● |

 Free from potential harmful additives such as 2-EHA, nitrites, borates, amines leading to a safer environment. It is also compliant with EU CO₂ emission performance standards.

Premium
PLUS EVO RANGE



Plus Evo Range

“The latest premium passenger car coolant range formulated for German OEMs & all silicated-based requirements”

Si-P-OAT (Phosphate - Organic Additive Technology) premium coolant.


A very long-life next generation premium engine antifreeze based on monoethylene glycol and containing cutting-edge silicate inhibitor technology with phosphate supported by a robust organic backbone (OAT - Organic Additive Technology).

Multifunctional coolant designed to cope with most extreme engine conditions for **combustion engines** and **Battery Electric Vehicles**.



| Approvals | |
|--|---|
| International Specifications | Recommended for use |
| <ul style="list-style-type: none">ASTM D3306-20JIS K2234-2018FVV R 530:2005NF R15-601-20GB 27943.1-2022BS 6580.2010GB 29743-2013Önorm V5123UNE 26-361-88/1 | <div><ul style="list-style-type: none">BMW LC 87, LC 97, LC 18VW TL 774-C, D, F, G, J, L (G11, G12, G12+, G12++, G13, G12 evo)Daimler Trucks DTFR 29C120/29D120Mercedes Benz MB 325.6/326.6TeslaAlfa Romeo / Fiat / Lancia 9.55523Chrysler MS 7170Volvo Cars 128 6083/002Opel / Vauxhall GME L1301</div> <div><ul style="list-style-type: none">ToyotaMB 326.0Deutz DQC CC-14 / DQC CA-14MAN 324NF / 324 Si-OATCummins 85T8-2JenbacherMTU MTL 5048Case JIC-501Ford ESD-M97B49-A</div> |

| Available packs | 1L | 5L | 20L | 60L | 208L | 1000L | BULK |
|-------------------------------------|----|----|-----|-----|------|-------|------|
| Glacelf Plus Evo Concentrate | ● | | ● | | ● | ● | ● |
| Coolelf Plus Evo -26°C Ready to use | | | | | ● | ● | ● |
| Coolelf Plus Evo -37°C Ready to use | | ● | | | ● | ● | ● |

 Free from potential harmful additives such as 2-EHA, nitrites, borates, amines leading to a safer environment. It is also compliant with EU CO₂ emission performance standards.

OUR BRAND NEW EV RANGE

Efficient products for your Electric Vehicle (EV)



EV Range

“The first premium range dedicated to Battery Electric Vehicles (BEV)”

An OAT premium coolant technology.

A premium Battery Electric Vehicle (BEV) coolant based on ultra-pure water and high-purity antifreeze grade ethylene glycol, with **reduced conductivity**.



| Approvals | | | | | | |
|------------------------------|------------------------------|----|-----|---------------------|------|-------|
| International Specifications | OEM's meets the requirements | | | Recommended for use | | |
| • GB 29743.2 - 20XX | • Delta Cosworth | | | • Hyundai • Kia | | |
| Available packs | 1L | 5L | 20L | 60L | 210L | 1000L |
| Coolelf EV Ready-to-use | | | | | | |



EV Micro Range

“The first premium range dedicated to Fuel Cell Electric Vehicles (FCEV)”

A non-ionic additive technology coolant.

A premium Fuel Cell Electric Vehicle (FCEV) coolant based on ultra-pure water and high-purity antifreeze grade ethylene glycol, with **low conductivity**.



| Approvals | | | | | | |
|---|----|----|-----|-----|------|-------|
| OEM's meets the requirements | | | | | | |
| • Sunrise Power Fuel-Cell Systems • BYD • King Long • Renault - Hyvia - Fuel-Cell Hydrogen Vehicles • Symbio • Caterpillar • Hopium | | | | | | |
| Available packs | 1L | 5L | 20L | 60L | 208L | 1000L |
| Coolelf EV Micro Ready-to-use | | | | | | |

Advantages of EV dedicated low conductivity coolant



Reduced electrical conductivity to mitigate hydrogen formation



Compatible and easy implementation with standard BEV components

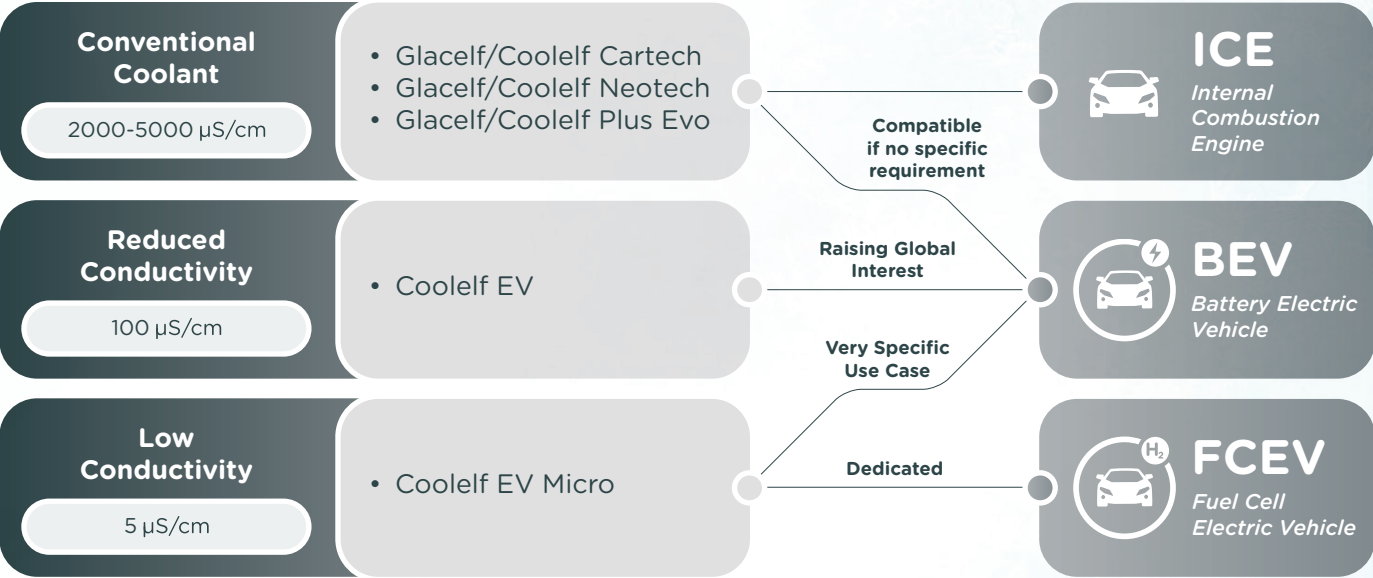


High cooling efficiency with inherently thermal properties



Balanced corrosion protection from proven inhibitor technology

Choosing the right coolant for your EV is the key to optimizing the cooling performance of your vehicle



Free from potential harmful additives such as 2-EHA, nitrites, borates, amines leading to a safer environment. It is also compliant with EU CO₂ emission performance standards.

Specific COOLANT RANGE



Auto Supra 2F

OAT Coolant Technology
(free from 2-EHA, nitrite and borate)

Specific standard coolant suitable for most combustion engines.

Packaging:

- COOLELF AUTO SUPRA 2F -26°C (Ready To Use) - 208L, 1000L, BULK
- COOLELF AUTO SUPRA 2F -37°C (Ready To Use) - 1L, 5L, 20L, 60L, 208L, 1000L, BULK
- GLACELF AUTO SUPRA 2F (Concentrate) - 1L, 5L, 20L, 60L, 208L, 1000L, BULK

Meets the requirements

- RENAULT 41-01-001/--S
- RENAULT 41-01-001/--T

Suitable for use

- VW / AUDI / SEAT / SKODA TL-774 D, TL-774 F
- FORD WSS-M97B44-D
- FOTON Q-FPT 2313005-2013
- CHEVROLET / OPEL / VAUXHALL GMW 3420, GMW 18270
- FIAT 9,55523
- LEYLAND TRUCKS DW03245403
- DEUTZ DQC CB-14
- SACM DIESEL DLP799861
- DETROIT DFS93K217, DFS93K227
- MAN B&W D36 5600
- CUMMINS CES 14603, CES 14439
- MAN 324 TYP SNF
- BERGEN ENGINES 2.13.01
- IVECO 18-1830
- DAF 74002
- SAAB B 040 1065



Eco BS 2F

OAT Coolant Technology
(free from 2-EHA, nitrite and borate)

Economical coolant which provides standard frost and corrosion protection

Packaging:

- COOLELF ECO BS 2F (Ready To Use) - 1L, 5L, 20L, 208L, 1000L
- GLACELF ECO BS 2F (Concentrate) - 1L, 5L, 20L, 60L, 208L

International Specifications

- BS 6580:2010
- NF R 15-601



MPG Supra 2F

OAT Coolant Technology
(free from 2-EHA, nitrite and borate)

Specific very long life coolant based on MPG and oriented to offroad vehicles (mining, agriculture, industrial engines)

Packaging:

- COOLELF MPG SUPRA 2F (Ready To Use) - 208L, 1000L
- GLACELF MPG SUPRA 2F (Concentrate) - 208L, 1000L

International Specifications

- ASTM D3306-20
- BS 6580:2010
- NF R15-601-20

Can be used for

- Case New Holland
- Caterpillar
- Claas
- Cummins
- Deutz
- John Deere
- Komatsu
- Liebherr
- MAN
- MTU
- MWM
- Wärtsilä



SI-OAT

SI-OAT Coolant Technology

Very long-life coolant dedicated to specific light and heavy-duty internal combustion engines (ICE).

Packaging:

- COOLELF SI-OAT (Ready To Use) - 5L, 20L, 208L, 1000L, BULK
- GLACELF SI-OAT (Concentrate) - 208L

International Specifications

- AFNOR NFR 15-601
- ASTM D 3306
- ASTM D 4985
- BS 6580 : 2010
- SAE J1034
- CUNA NC 956-16

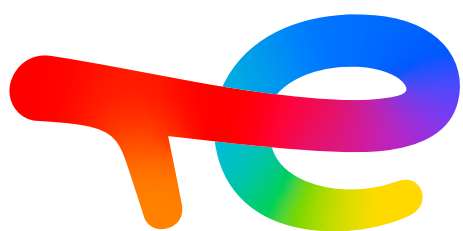
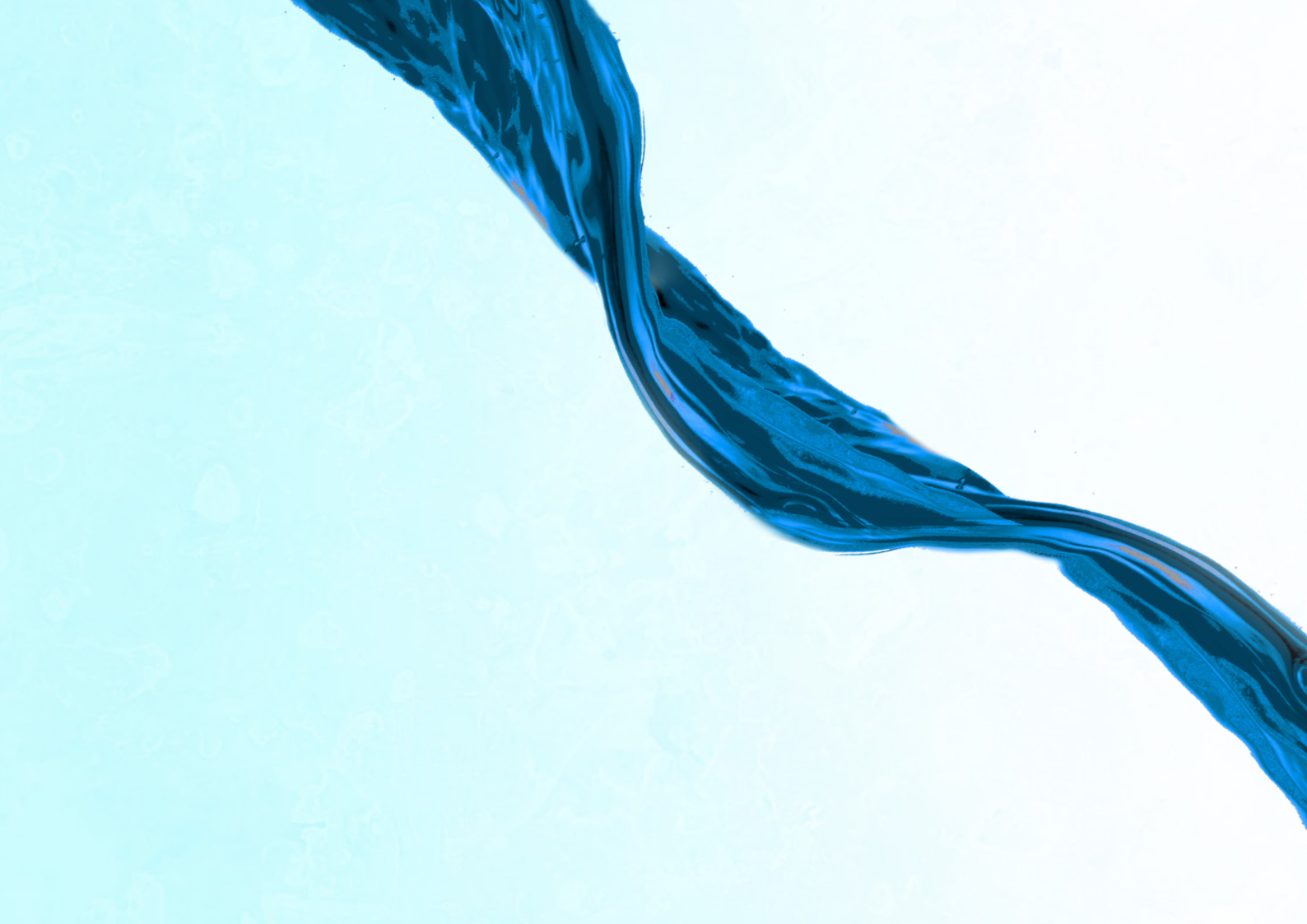
OEMs approvals

- VW Group
- DAIMLER / MERCEDES-BENZ : MB 326.6 DTFR 29D120 (former MB 326.5)
- MAN 324 Type SI-OAT
- CUMMINS CES 14603
- DEUTZ DQC CC-14
- Scania TB1451
- Liebherr LH-01-COL
- Claas
- MAN ES
- MTU MTL 5048



Free from potential harmful additives such as 2-EHA, nitrites, borates, amines leading to a safer environment. It is also compliant with EU CO₂ emission performance standards.

This image shows a blank, lined notebook page. The page has a light blue background with a subtle, textured pattern. A vertical line divides the page into two equal columns. At the top of each column, there is a grey rectangular header with the word "NOTE" written in red, bold, uppercase letters. Below the headers, the page is ruled with horizontal lines. The lines are evenly spaced and extend across the width of each column. The overall design is clean and minimalist, suitable for taking notes or sketching.



TotalEnergies

TotalEnergies Lubrifiants

562 avenue du Parc de L'Île
92000 Nanterre - France
Tél.: +33 (0)1 41 35 40 00

<https://lubricants.totalenergies.com/>