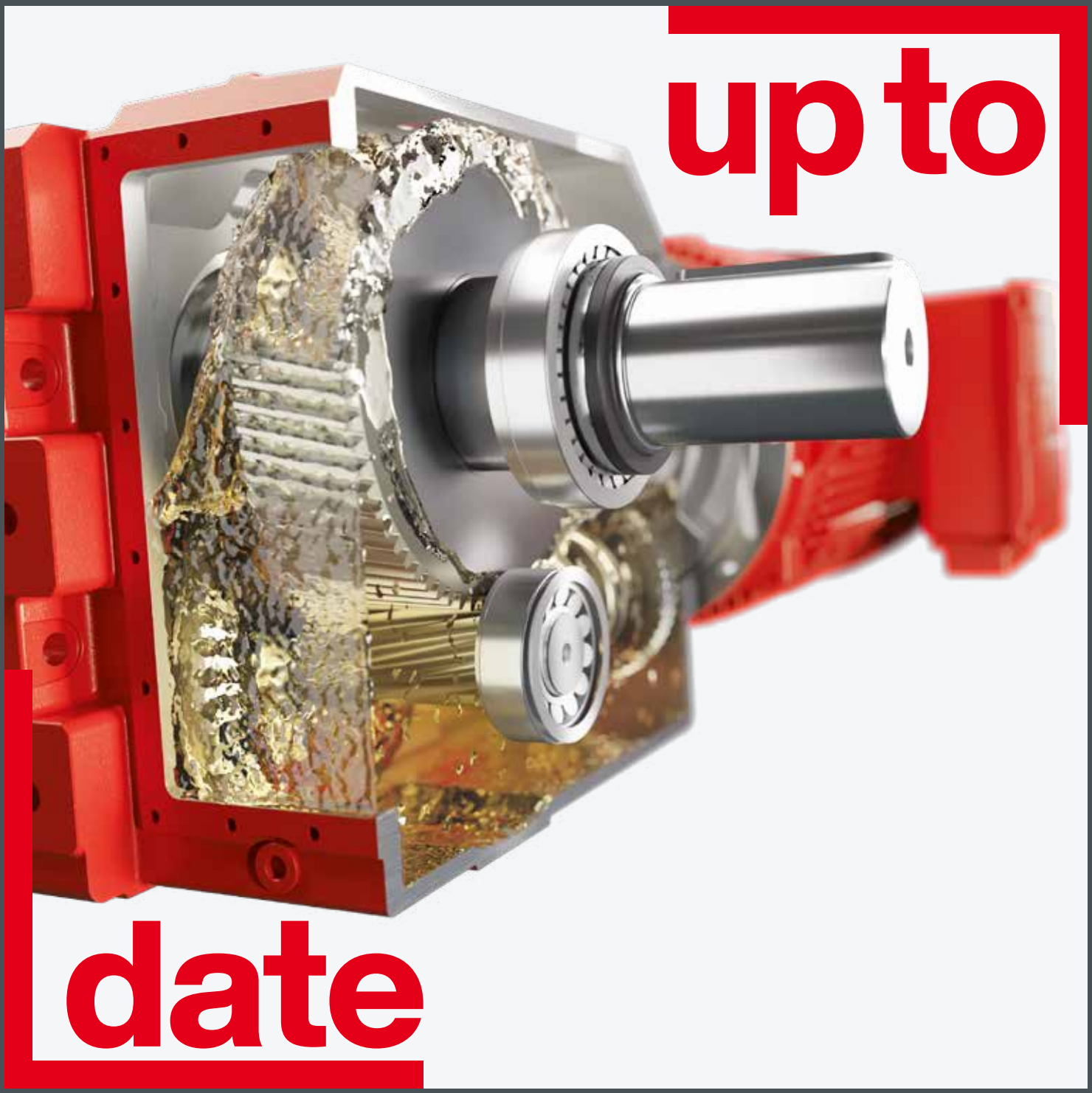
SEW EURODRIVE

Sustainable lubrication

Using lubricant with a clear conscience
GearFluid by SEW-EURODRIVE

→ 1/2022



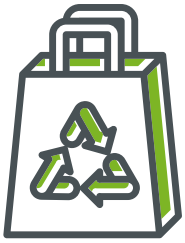
Facts about crude oil and lubricants

Did you know that humans have been using crude oil for more than 12 000 years? Whereas it used to be oil that had made its way to the earth's surface and reacted with oxygen to form a type of bitumen, its uses have changed considerably over the millennia and become more specialized – and that includes extraction. Today, oil is all around us in different materials, clothing and lubricants. However, everything is still based on crude oil. With our new GearFluid, which is based on renewable raw materials, we will show you that there are other options.

1

Crude oil is all around us

Crude oil is the starting ingredient for countless materials that are all around us every day. Its best known use is perhaps in plastics. Depending on the arrangement of the molecules and the substances added, materials can have different properties. They can be rigid, flexible, transparent, or colored. They can have insulating properties or be made into foams and used as filling material for seats, for example.



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Crude oil in clothing

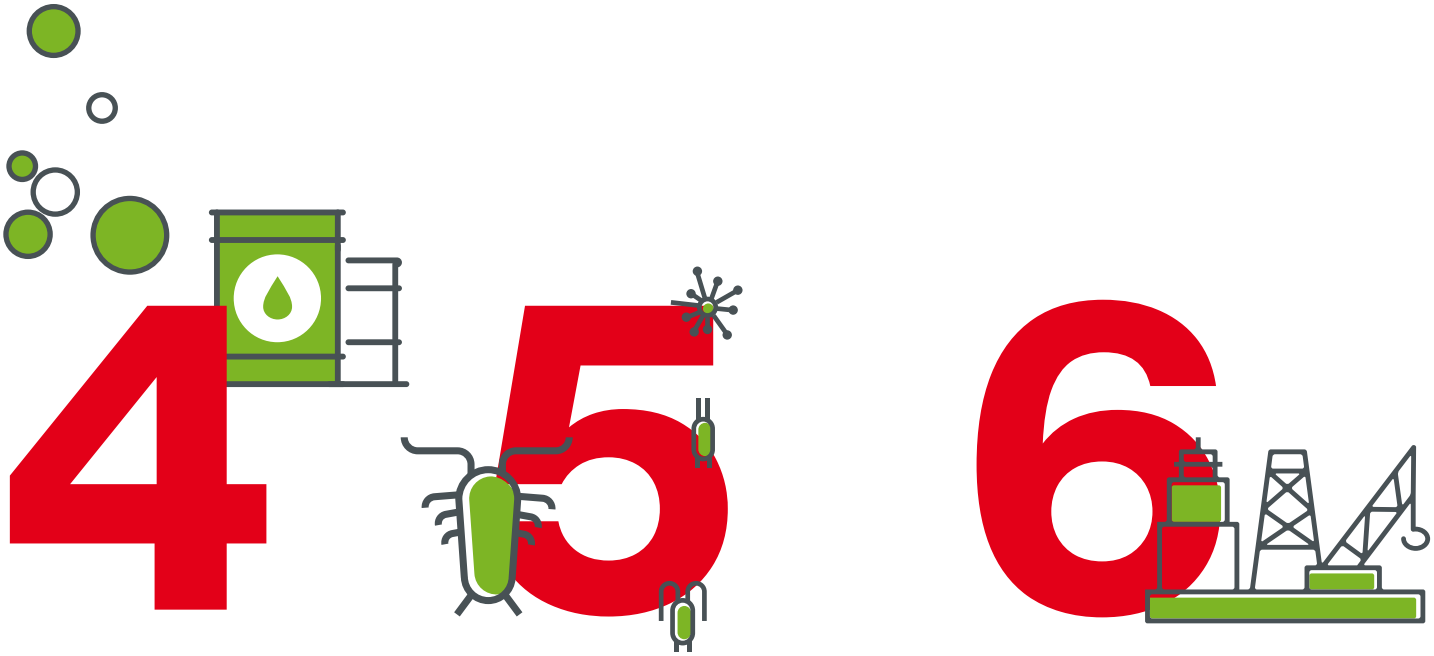
Many articles of clothing contain polyester or polyamide fibers, which are manufactured from crude oil. These artificial fibers are very robust and, depending on the design, make our clothing cozy and soft, hard-wearing and long-lasting, or even waterproof.

3

Crude oil in cosmetics and medicines

Creams, ointments, medicines, shaving foam and cosmetics products often contain paraffin. Paraffins are a mixture of saturated hydrocarbons that are obtained during vacuum distillation.

Crude oil and lubricants
Facts



Not all crude oils are the same

Every oil has a unique composition. Around 170 types are known worldwide. The different types are named according to where they are extracted. Well-known examples include “Brent” (European oil) and “West Texas Intermediate” (United States).

Since raw oil is made up of approximately 17 000 ingredients, the extracted oils vary. Sulfur is just one element of many. Most of the compounds in oil are hydrocarbon compounds. Apart from anything else, this is an important indication of how crude oil is formed – from organic material.

Crude oil is actual biomass

Millions of years ago, microorganisms and algae died and sank to the bottom of the sea. Due to the lack of oxygen, they didn’t decompose, but instead formed a sludge. Over the course of many millions of years, the combination of no oxygen, pressure and temperature transformed this into the crude oil that is pumped out today.

Crude oil is not finite

Oil itself will never run out, since the creation process described in Point 5 is always ongoing – so, naturally, is also happening now – as long as plants, phytoplankton and microorganisms such as zooplankton exist.

However, given the current rate of consumption, it is doubtful whether there will be sufficient reserves in the future, and indeed whether these can be extracted cost-efficiently without damaging nature.

Crude oil and its uses

Most people will surely immediately think of oil being used as fuel, such as gasoline, kerosene, heating oil and petroleum.

However, liquefied gas (LPG) is also obtained during oil extraction.
Around 90 percent of the crude oil extracted is burnt.
The remainder is processed. A large portion of this (approx. 7%) serves as a basic material for the chemical industry.

Crude oil as a lubricant

Lubricants are used to ensure drives and machinery of all kinds operate with low friction. In general, these are oil-based, as obtaining and processing oil without complex synthesis processes has, till now, been comparatively cost-effective.

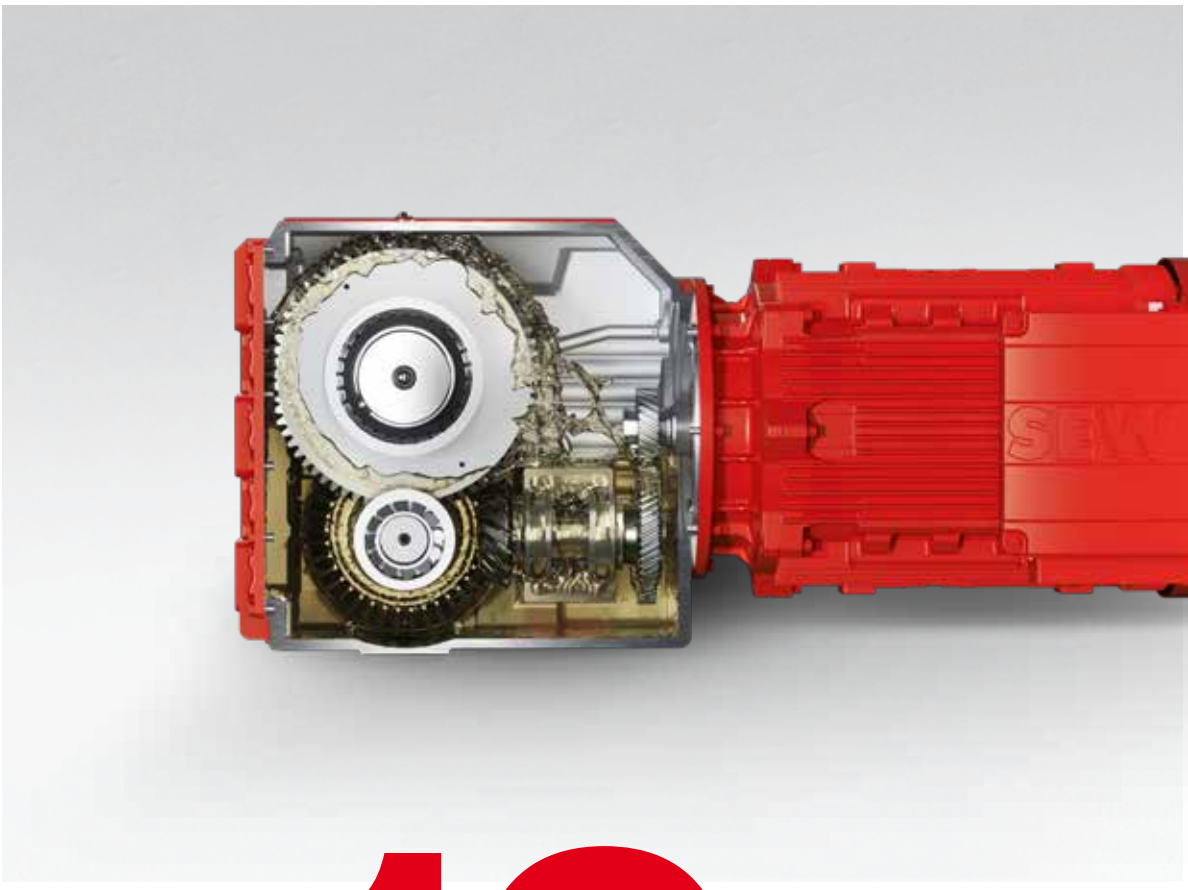
Mixing in up to 30% different additives can create high-quality, ready-to-use oils. Depending on the application, specialist oils such as motor oil, gear oil, chain oil, hydraulic oil, sewing machine oil or cutting oil are used.

Not all oils are the same

You can't just use any oil as a lubricant in industrial gear units, either. Unfortunately, vegetable oils are generally not suitable for use as gear oils. They age quickly, become rancid and lose their lubricating characteristics.

Among industrial gear oils, there is a distinction between mineral and synthetic lubricants. Mineral lubricants can be manufactured very cost-effectively through vacuum distillation. They consist of molecular chains with different structures, and can also contain other materials such as sulfur and nitrogen. During the manufacturing process, the molecular chains are completely fractured, undesirable components are removed and similar molecules are put together again in structured form. Additives can be used to alter characteristics in a targeted way. Technically food grade gear oils are physiologically harmless and have no taste. Biodegradable lubricants to OECD 301 are used in areas where there is a risk of the oil being released into the environment.

Crude oil and lubricants
Facts



1

Oils from biomass

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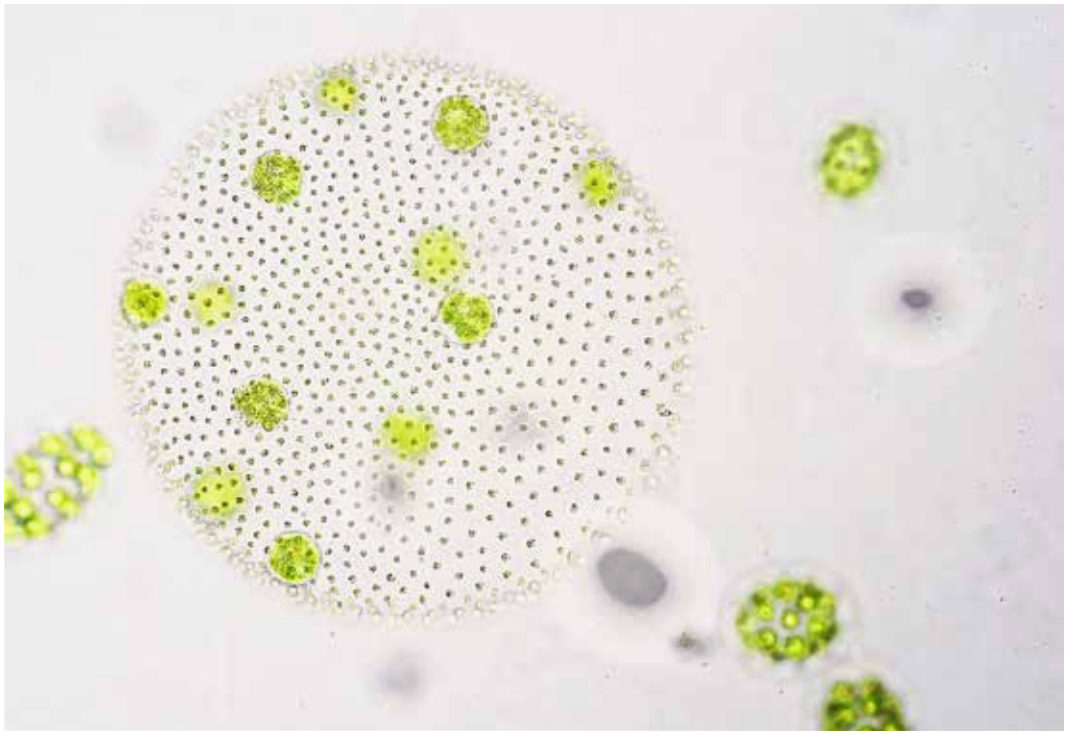
Instead of using crude oil, these oils are based on renewable raw materials. Sustainable biomass and food waste are converted into oil in a sophisticated synthesis process. A sustainable CO_2 cycle can only be achieved using CO_2 obtained from the air and/or from biomass.



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1 Gear unit with GearOil by SEW-EURODRIVE
2 Phytoplankton
3 Gear oil in the twin-disc test rig
4 GearFluid

4

Oil from sustainable biomass

GearFluid by SEW-EURODRIVE is manufactured using sustainable biomass, e.g. from waste, rather than fossil raw materials – this is shown in a certified mass balance approach. The extended service life and the resulting fewer oil changes reduce oil consumption and therefore also the costs for an oil change compared to conventional polyglycol lubricants. In addition, this saves more CO_2.

GearFluid by SEW-EURODRIVE complies with the Renewable Energy Directive of the European Commission. This directive stipulates that no foodstuffs or palm-based raw materials should be used in production.

We have also thought carefully about the containers for the GearFluid. The canisters are manufactured using plastic that contains some recycled material.

As you can see, the new GearFluid by SEW-EURODRIVE has many benefits. It's really not hard to implement sustainable production and protect the environment in several ways at once.

Keen to find out more? Our sales experts will be happy to help.

Sustainable

The base oil for our GearFluid is manufactured from sustainable biomass and does not use any fossil raw materials.

Service life

Compared to conventional polyglycol oils, our GearFluid can extend the service life of the lubricant and the interval between oil changes for the gear units by as much as 50%.

Efficient

Our GearFluid boosts efficiency compared to mineral oils, and reduces energy consumption and operating costs, meaning it is also a very efficient lubricant.

Resources

By using our GearFluid, you can reduce your Corporate Carbon Footprint (CCF). In this way, our economy can meet its responsibility to keep the environment intact, actively protect it and use resources sustainably.

Lower CO_2 emission

The base oil for our GearFluid is manufactured with 84% less CO_2 emission compared with conventional polyglycol base oils.

Organic materials

The biomass used consists entirely of naturally occurring organic materials and food waste. No additional agricultural land is required to produce the biomass. As a result, GearFluid helps achieve the goal of greater sustainability.

Quickly biodegradable

GearFluid can also be used in environmentally sensitive areas.
According to OECD 301B, GearFluid by SEW-EURODRIVE is quickly biodegradable.

Biological and environmentally friendly

GearFluid by SEW-EURODRIVE – 84% less CO_2 emission compared to conventional polyglycol lubricants

1 Sustainable biomass made from green and food waste, among other things

2 Processing and synthesis of the biomass into the base oil for the GearFluid

3 Mixing in high-quality additives creates the finished GearFluid

4 Filling the gear units and canisters with GearFluid by SEW-EURODRIVE


4
3

Other topics that might be of interest to you

Gear unit
Industrial gear unit
Extended warranty
Lubricants

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