

## SIPEX

A range of high-quality dearomatized hydrocarbon oils for use in both Ammonium nitrate fuel oil (ANFO) and Ammonium nitrate emulsion explosives

- ✓ High purity with low sulphur and aromatics
- ✓ Easily emulsified
- ✓ Colourless and odourless
- ✓ Oxidatively and thermally stable
- ✓ Excellent low temperature fluidity
- ✓ Low volatility

- Ammonium Nitrate Fuel Oil (ANFO)
- Heavy ANFO
- Bulk emulsions
- Cartridge and packaged emulsions

The SIPEX portfolio of hydrocarbon oils is designed for use in the manufacture of ammonium nitrate explosives. The broad range of viscosities and pour points provides a variety of options to meet specific formulation requirements. SIPEX oils are colourless and odourless, have extremely low sulphur levels and trace aromatics content for safe use in confined environments. They therefore have considerable benefits in terms of health, safety and the environment over the traditional diesel or fuel oils used in ANFO. The purity of SIPEX oils means they are not classed as a carcinogenic, mutagenic or reprotoxic hazard. This reduces any health risk to operators when using them.

SIPEX products are particularly suitable for underground mining, as these highly refined oils help reduce toxic emissions allowing workers to resume work in a shorter time, increasing productivity.

SIPEX oils are ideal for use in a range of emulsion explosives, from very fluid to thick formulations. They aid emulsion production and stability across a range of temperatures and ensure excellent storage stability.

SIP have recently introduced sustainable SIPEX ECO oils to the range, to enable manufacturers to efficiently reduce the carbon footprint of existing formulations.

# The types of fluids used in ANFO and emulsion explosives can differ widely depending on their nature, however, some SIPEX oils can be used in both application areas

## Ammonium Nitrate Fuel Oil (ANFO)

ANFO represents a major share of the explosives market, due to its economics and uncomplicated manufacturing process, and despite its low detonation velocities and potential environmental impact. There has been a drive to control contamination by replacing the fuel oil with other less toxic fluids. Using highly refined SIPEX oils helps reduce emissions, which are an issue especially in underground mining.

SIPEX 2, SIPEX 4 and SIPEX 9 are suitable for ANFO production. These give the producer a range of viscosities from 2.4 cSt to 9.0 cSt at 40°C to fit various requirements. As ANFO is sensitive to moisture, posing problems in certain applications, emulsion explosives can be used as a more efficient alternative. Some of the SIPEX oils are also suitable for these types of explosives.

## Emulsions Explosives

Although emulsions are more expensive, they are safer, more efficient, have lower toxic fumes and do not have the health hazards associated with using carcinogenic fuel oil. Since they are water-based, the problem of sensitivity to moisture is eliminated. The SIPEX range ensures that important properties required in the diluent oil such as energy efficiency, stability across a range of temperatures and storage stability can be achieved in different types of emulsion, from putties to fluid formulations.

SIPEX 4, SIPEX 8, SIPEX 12 and SIPEX 20 are recommended for use in emulsions as they have extremely low sulphur and aromatics content and are odourless and colourless.

## SIPEX ECO, a pathway to sustainability

To help customers on their way to a net-zero future, SIP is working to bring products into their portfolio that support a circular economy. SIP has introduced more sustainable products, SIPEX 4 ECO and SIPEX 9 ECO. They are the result of a superior process for re-refining used mineral oils that produces new base oils indistinguishable in quality from virgin mineral base oils. More importantly, these products give up to an 80% reduction in carbon emissions compared to conventional base oils.

## Typical characteristics of SIPEX base oils

CHARACTERISTICS	SIPEX 2	SIPEX 4	SIPEX 8	SIPEX 9	SIPEX 12	SIPEX 20	SIPEX 4 ECO	SIPEX 9 ECO
Viscosity @ 40°C, cSt	2.4	3.8	8.1	8.8	11.9	20	4.2	9.2
Pour Point, °C	-33	-54	-9	-39	-33	-15	-15	-15
Flash Point, (PMC) °C	105	115	146	160	190	195	115	180
Sulphur Level, ppm	<1	<1	<1	<1	<10	<10	<3	<3
Aniline Point, °C	-	80	92	104	110	104	95	99



## SIP SPECIALITY OILS AND FLUIDS

For more than 35 years SIP Speciality Oils and Fluids has been a respected and recognised independent marketer and distributor. Based in London, we have been supplying customers in Europe and the wider African and Middle Eastern markets for many years. SIP has one of the most comprehensive product portfolios, covering a wide range of base fluids for many product applications.

We are especially known for our extensive range of viscosity grades of mineral white oils with Halal, Kosher and Vegan approvals, and our premium oils for industrial and drilling applications. We manage our own vessel and road tanker operations in-house, based around our storage hub in North West Europe. We pride ourselves on our ability to deliver where our competitors cannot by giving you tight lead times, support for unusual viscosity grades, and our own experienced in-house technical services and operations team who offer a bespoke service.



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