Environmentally Responsible Lubricants for Hydroelectric Plants

Making good environmental lubricant choices should not have to compromise equipment reliability or functionality. In fact, appropriate environmental decisions can be part of a cost-effective strategy with IKV products.

IKV Group is committed to leading the hydroelectric industry by supplying environmentally friendly and biodegradable lubricants hence minimising the impact of its activities on the environment.

IKV Group also manufacture a full range of biodegradable oils, greases and non-toxic lubricants for use in a wide variety of industries and applications from biodegradable hydraulic and chain saw oils to cleaner and safer agricultural and rail industry lubricants thereby helping to reduce the environmental impact of the materials we supply.

By ensuring our customers are using the optimum lubricant for their application we reduce the overall lubricant consumption.

By utilising modern lubricant technology our customers avoid wastage due to unnecessary relubrication and lubricant replacement—a synthetic lubricant can extend life expectancy several times over a conventional mineral oil based lubricant.

Maintaining high levels of equipment productivity, ensuring the safety of operations and protecting the environment are IKV’s priorities when generating energy in hydroelectric power plants.

The following pages contain information about BESLUX BIOGREASE M2-HT which is our biodegradable grease for Archimedes’ screw bearings and a selection of gear oils for hydroelectric gears—including biodegradable, synthetic and mineral.

The key points of its strategy to achieve this are:

* Minimise waste by evaluating operations and ensuring they are as efficient as possible.

* Source and promote a product range to minimise the environmental impact of both production and distribution whilst reducing power consumption in production of all materials.

* Meet or exceed environmental legislation that relates to the industry.
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Recommendations

Archimedes Screw Bearing

Biodegradable Grease

BESLUX BIOGREASE M2-HT is a lithium soap thickened biodegradable ester.

BESLUX BIOGREASE M2-HT is formulated with a low environmental effect additive package and is ideal for use when water or soil contamination is a consideration.

BESLUX BIOGREASE M2-HT has outstanding lubricating capacity plus anti-wear, anti-corrosive & EP properties.

BESLUX BIOGREASE M2-HT offers good performance in applications with steel-on-steel spherical plain bearings, ball bearings and roller bearings. It also offers superior low temperature start-up performance and is suitable for medium to high loads.

BESLUX BIOGREASE M2-HT is a high performance lubricant with a drop point of 180°C, an operating temperature range of -25 to 120°C and is >90% biodegradable.

Gear Oil

Biodegradable Oil

IKV-TRIBIOGEAR 220 is a synthetic ester environmentally friendly biodegradable oil with extreme pressure additives.

IKV-TRIBIOGEAR range name is based on TRI for tribology the study of friction, wear and lubrication; the science of interacting surfaces in relative motion. BIO for biodegradability & GEAR where the product is developed to be used.

IKV-TRIBIOGEAR 220 is formulated according to ecological criteria defined by the European Commission (Directive 2005/360/EC).

IKV-TRIBIOGEAR 220 has superior antiwear, anticorrosion, antifoam and antioxidant properties. It reduces friction and wear of gearboxes, especially at low and high temperatures.

IKV-TRIBIOGEAR 220 is appropriate whenever extreme oil pressure and long term is necessary. It is suitable for all reducing loaded toothed cylindrical, helical, and hypoid bevel, wheel and worm gears.

IKV-TRIBIOGEAR 220 is miscible with mineral oils and oil type polyalphaolefin. To maintain its biodegradability properties, a prior rinsing of the installation is recommended however.
**Mineral Gear Oil**

**IKV GEAR 220** is a premium quality mineral based gear oil. It contains additives is ideal for use when water or soil contamination is a consideration.

It also offers exceptional protection in an environment of extreme pressure, anti-wear, anti-oxidation and anti-corrosion properties. Its high viscosity index allows it to remain effective in high and low temperatures.

**IKV GEAR 220** is intended for use wherever an extreme pressure and long life oil is required. It is suitable for the lubrication of heavily loaded gear sets including worm gears and industrial hypoid units. It provides protection in applications where shock loading occurs.

It is also suitable for the lubrication of plain bearings and in rolling contact (anti-friction) bearings. It can also be used in circulating systems in heavy industry, such as ports, cement works and other mechanical based industries.

IKV and partners also manufacture a full range of WRAS approved products for wet environment applications including cooling towers, steam, hot and chilled water, effluent, chlorinated water and sludge.

Our **WRAS (Water Regulatory Advisory Scheme) approved** products include:-
- **WRAS Approval Number 1009527 G. BESLUX BESSIL EH-00** – a clear silicone paste for use with water up to 85°C.
- **WRAS Approval Number 1206543 G. BESLUX BESSIL EH-3** – a clear silicone paste for use with water up to 85°C.
- **WRAS Approval Number 1010526 BESSIL F-50** – a clear silicone oil, intended for use as a lubricant for use with water up to 85°C.
- **WRAS Approval Number 0912504 BESSIL F -10 000** – a clear silicone lubricant for use with hot and cold water up to 85°C.

We offer free technical support so please do not hesitate to contact us regarding your application or equipment requirements.

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**Recommendations**

**Gear Oil**

**Synthetic Gear Oil**

**BESLUX GEARSYNT XP-220** is a fully synthetic industrial gear oil (PAO). It has been designed to get outstanding performance so as exceptional anti-wear and rust preventive properties even under extreme conditions.

The synthetic oil used in **BESLUX GEARSYNT XP-220** offers excellent oxidation resistance and thermal properties. It has a high viscosity index and low friction coefficient so these parameters provide a significant reduction in power consumption in many gear drives in comparison to conventional mineral oils. Extended oil life and drain intervals reduces oil consumption and manpower costs.

**BESLUX GEARSYNT XP-220** is compatible with mineral oils and synthetic gear oils based on PAO’s, Polybutene or Ester. It is not compatible with synthetic gear oils based in Polyalkyleneglycol. It offers excellent compatibility with common gearbox materials including paints and joints (NBR, FPM, Viton).

**BESLUX GEARSYNT XP-220** includes additives which provide resistance to micro pitting or grey flecking and protection against scuffing. It also offers protection against corrosion in severe conditions included a seawater environment. It has excellent compatibility with ferrous and non-ferrous metals and excellent properties at low and high temperature.