

The mobster, the frying pan, the fishing hook and the hose

WHAT DO THE FOUR THINGS ABOVE HAVE IN COMMON? FOUR SIMPLE LETTERS: P, T, F AND E – OTHERWISE KNOWN AS POLYTETRAFLUOROETHYLENE. HERE'S HOW THEY'RE RELATED.

PTFE was discovered by accident. It began with a scientist trying to make a new refrigerant, and ended with him sawing in half a bottle of tetrafluoroethylene gas to find out what was happening inside. Luckily what he found led to the patenting of PTFE by his employer, or he could have been out of pocket to the tune of one gas bottle, and maybe out of a job too.

The discovery was made in 1938, but it was the 1950s before PTFE was first used for one of its most well-known applications. A French engineer had been using PTFE to stop his fishing tackle sticking, when his wife asked him to try it on her frying pan. Thirty years on, the slippery, non-stick qualities of PTFE (branded 'Teflon' in 1945) were so well-known that the head of the Gambino crime family – who avoided conviction in three major US Mafia trials – was nicknamed The Teflon Don.

And where does the hose fit in? Just about anywhere in your process that you want unreactive and non-contaminative properties.

PTFERIKS

The *ERIKS* range of PTFE hoses is growing steadily, and *ERIKS* is also manufacturing its own PTFE hose products. So now you can get PTFE qualities in your hose, with *ERIKS*' quality of service.

ERIKS uses the best quality compounds and the best manufacturing and assembly processes in the industry. Because unlike some hoses, producing a ready-to-use PTFE hose is not just a matter of cutting to length and fixing on an end.

A PTFE process hose, for example, will have a PTFE inner, but will be wrapped in metal braid to provide additional structural strength, and silicone wrapped on top of

that to enable easy cleaning. This all takes time – but so does replacing a hose which has failed or, worse still, a product batch which has been contaminated.

A clean sweep

Across the chemical, pharmaceutical and food industries, PTFE hose has a clean sweep of approvals for its non-absorbent, non-reactive, non-contaminative properties.

Phalite-free and anti-static, PTFE hose is approved by the US Food and Drug Administration, and not only is it safe to use with chemicals, drugs and foodstuffs, it's also inert to reaction with the sometimes even more aggressive products used to clean hoses between processes.

So it may have come a long way from fishing hooks and frying pans, but PTFE hose from *ERIKS* is still as tough as a New York mobster.



Carl Lilley FCM
CCC Manager
ERIKS Hose Technology

(Real) life can be

TOUGH

A COMPONENT CAN LOOK PERFECT IN CAD, ALL THE SPECS CAN MEASURE UP, BUT THEN IT GETS OUT INTO THE ROUGH AND DIRTY REAL WORLD AND SUDDENLY IT DOESN'T LOOK QUITE SO BRIGHT, SHINY AND EFFECTIVE. AND THE ROUGHER AND TOUGHER THE APPLICATION, THE SOONER THE SPARKLE RUBS OFF.

Fortunately, SKF have designed and engineered Explorer Angular Contact Ball Bearings for the real world – which doesn't get much more real than in the chemical industry.

A large number of pumps of all shapes and sizes are used in the industry, they face a wide and varied range of challenges, and they are required to be highly reliable.

By its nature, the industry tends to use pumps for moving all kinds of aggressive media and, if a gasket fails, it may not long before the bearing suffers. If that's not spotted early, a relatively minor problem can lead to major damage and expense, as the impeller or even the casing is affected. These are definitely tough conditions to operate under, but they're the perfect proving ground for a bearing.

A bearing as robust as the SKF Explorer cannot only resist misfortune and mistreatment more effectively, but when it does fail it does so more slowly, and more consistently. So there's more time to identify the fault, and less risk of a sudden, catastrophic, expensive failure.

Bearings built better

Pumps that can accommodate higher loads and speed, that may run under poor lubrication or contaminated conditions, and that may experience cavitation – leading to increased bearing loads, impeller damage, increased vibrations and shaft deflections – need bearings that can take the strain.

The SKF Explorer bearings have been specifically engineered for these types of operating conditions.

Featuring cleaner steel with fewer impurities, they have also been heat treated with a unique SKF process to provide temperature stabilisation up to 150°C. They're manufactured to P5 running accuracy so they run smoother and cooler with less vibration, and P6 dimensional accuracy for greater control of mounted clearance or preload, for better ball control. Combine with a cage and raceway contact surfaces that provide a superior oil film even when lubrication is inadequate, and you have a bearing that lasts substantially longer than most.

That means that in a sealed-for-life pump, you can be confident that the bearing will easily match the life of the pump and the lubricant, and even exceed them. And in pumps which do require lubrication, even if they are over- or under-lubricated the SKF Explorer bearing will carry on operating efficiently and safely.

In fact, the life of an Explorer angular contact ball bearing can be at least three times longer than a conventional bearing, depending on operating conditions.

So life can be tough, but with the right bearing it can also be long.

