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# FATIGUE and COMPLEXITY
## The next stage of REACH

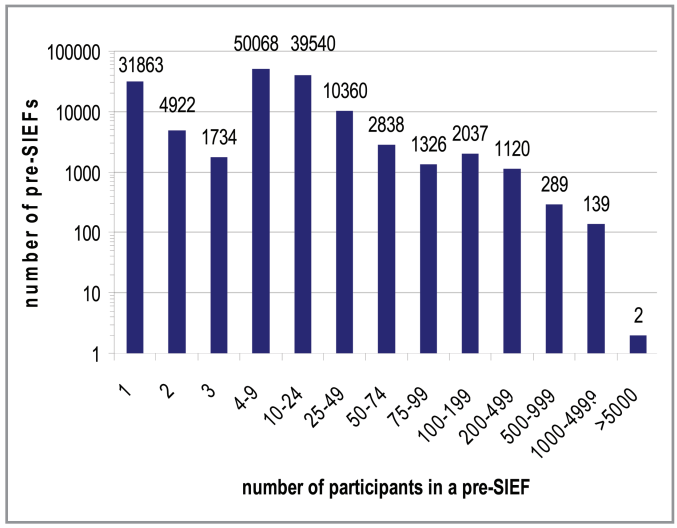
As is widely known, the substance pre-registration period of REACH ended on 1 December 2008. It was anticipated by the legislators that the next phase would begin almost immediately – the formation of SIEFs (Substance Information Exchange Forums). However, the reality was far from the truth. Confusion, pre-registration fatigue, complexity and lack of clarity with the process took its toll, and the waiting game started. Who would blink first? Inevitably it was the larger companies with the necessary resources and understanding who began to kickstart the process. They could see the first registration date of 1 December 2010 looming for substance manufactured or imported in volumes greater than 1000 tonnes per annum.

SIEFs are legally mandated in the REACH legislation. Their purpose is to bring together companies who pre-registered the same substance so that existing (mainly vertebrate animal) data are shared, potential data gaps identified, and new studies commissioned only once and not duplicated. These will then be used for the registration of the substance by the Lead Registrant in the SIEF, approximately 6 months in advance of the appointed date. The other members will then submit their own dossiers that refer to the common dossier of the lead registrant and provide additional information that is company-specific, including references to the experimental data already submitted. Other tasks of the SIEF are to agree the hazard classification of the substance (which is also mandatory under the new European Classification, Labelling & Packaging regulation – the EU transposition of GHS - for substances by the same 1 December 2010 deadline as the REACH first wave registration), and to prepare robust summaries of existing data.

Some SIEFs have only a few members, but for many substances the membership can run into hundreds and in some cases, thousands of legal entities (See Figure 1). A further complication is that existing or new industry consortia are overseeing the data gathering for substances of interest, and these consortia can span a number of SIEFs. Consortia have no legal standing under REACH. Overall then, is it no wonder that the organisational challenges involved in SIEF formation appear to be overwhelming?

The REACH-IT system for pre-registration permitted a pre-registrant to indicate if he wanted to act as an SFF (SIEF Formation Facilitator) for the substance. This is not an official

Figure 1




role, but is seen as a way of initiating and managing the activities of the SIEFs. However, for many thousands of substances, no SFFs were identified or the self-appointed SFF has failed to begin the process, or has not followed up on initial communications. In a number of cases other companies or consortia have stepped in to bring order from chaos to get the ball rolling. For the smaller companies who may not have such a deep understanding of REACH, the situation must appear bewildering. This is not so much a problem at the moment for substances due for registration in 2018, but for 2013 (and particularly 2010) registrations, time is not our side and the affected companies may wish to contact others who pre-registered the same substance to find out what is going on, if no SIEF has been formed yet.

CEFIC (the European chemical industry's association) has recently published a document offering advice to companies on how to work around any obstacles to SIEF progress. A number of other organisations have also prepared similar publications giving assistance for SIEF formation.

Concurrent with SIEF activity is that of building Exposure Scenarios (ES) across the different supply chains for all identified uses. Here, at least in the lubricant sector, there is more clarity. ES's are required for substances (and substances in formulated products) that fulfil certain criteria - > 10 tpa, classified as dangerous for supply, or PBT/vPvB. An Exposure Scenario is 'the

set of conditions, including operational conditions and risk management measures, that describe how the substance is manufactured or used during its life-cycle and how the manufacturer or importer controls, or recommends downstream users to control, exposures of humans and the environment. These exposure scenarios may cover one specific process or use or several processes or uses as appropriate' (REACH Regulation article 3.37). This information, which permits more clarity in how to handle a substance safely (Risk Management Measures) and the conditions under which it is to be used (Operational Conditions), will be supplied by incorporation into what will be known as extended safety data sheets (See Figure 2).

For the European lubricants industry, a working group under the auspices of ATEIL/ATC is developing the criteria for Generic Exposure Scenarios. Much of the work so far has been in mapping a wide range of lubricant products using the Substance Use Descriptor System (SUDS). Using this nomenclature it is possible to describe a product in terms of its Sector of Use (SU), Product Category (PC), Process Category (PROC), and Environmental Release Category (ERC). The end result is a short coding system that defines where and how a substance is used. This has to be done for Industrial, Professional and Consumer uses. From a range of around 200 different lubricant products, it was then possible to consolidate them based around this code, and using the PROC values in particular, into 5 use groups, and one further group for blending operations. This is possible because the way a substance is used and subsequently enters the environment can be common for a diverse range of materials, e.g. dilution before use, used in closed or open systems, wide dispersive use, etc. Having associated products into smaller groups, it is then practical to extrapolate individual raw materials in a specific lubricant to a particular use description.

This information will shortly be hosted on the ATIEL and ATC websites and members of the various European lubricant industry associations will be receiving pro-forma letters from the working group that can be sent to customers and raw material suppliers. In addition to providing guidance to up- and down-stream actors in the supply chain, this communication will also act as a formal notification of 'identified uses' for substances/products. This is a requirement under REACH if a formulating company wishes its use to be incorporated into the raw material exposure scenario, and it also gives customers the opportunity to check that their use is covered by their supplier(s).

Later this year it is intended to complete a range of Generic Exposure Scenarios for lubricants, which will be held in a library for companies to use in the preparation of their own Exposure Scenarios.

Although this work has been organized under the auspices of the ATIEL/ATC, the cooperation of other EU lubricant industry groups has been excellent. These include VSI (Germany) and GAIL (Italy). Exposure Scenarios are not an easy concept to grasp at first sight, and the building of a library of generic ES's will be invaluable in assisting the European lubricant industry in fulfilling its obligations under REACH for the communication of safe use information to downstream users.

Overall, the implementation of REACH is proving a rocky road for the chemical industry, but at least we in the lubricants industry are moving the process forward and are relatively well placed to enter the next stages in an efficient and timely manner.

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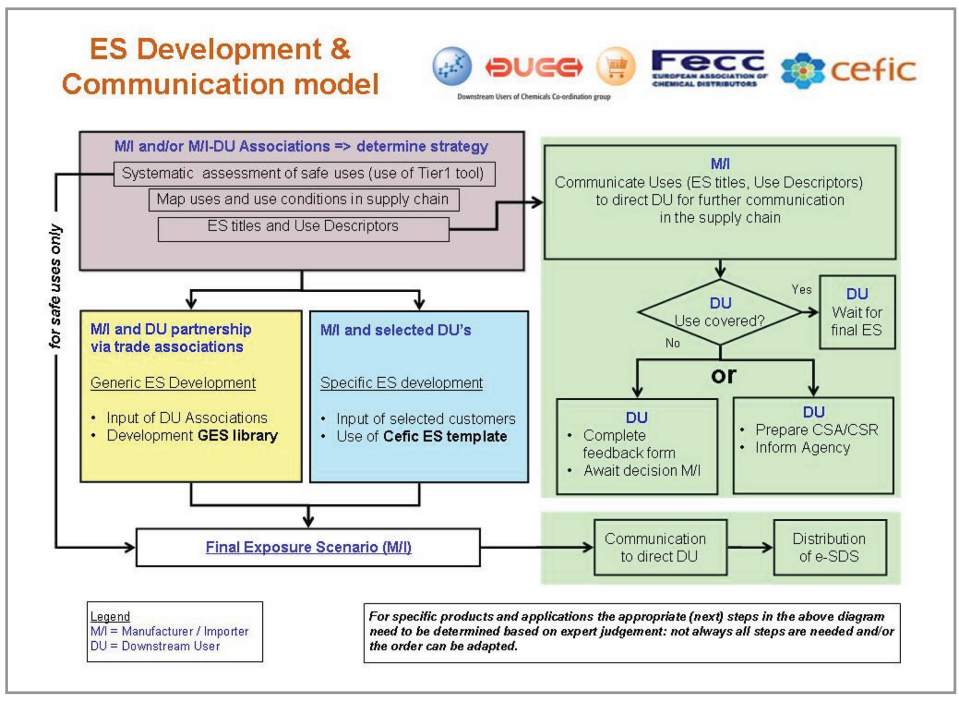
The opinions expressed in this article are those of the author and do not necessarily reflect the opinions of Castrol Industrial Lubricants.

Figure 2



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# There is hope in innovation for the automotive oil sector

Despite the 'unfavourable trading conditions' in the first quarter of 2009, UKLA President David Jukes highlighted in the last issue of Lube, Millers Oils, the specialist lubricants and fuel additives manufacturer, is remaining upbeat about automotive oil sector prospects for the year. The Brighouse-based company has been pressing ahead with the distribution of its innovative Nano Technology range of transmission oils, which has now been adopted in motorsport applications and is currently developing further products for launch in 2009 that are designed to increase the efficiency of engine performance.

In addition, Millers Oils is continuing efforts with its customers in the workshop trade and motor factors, pushing its Premium and Trident range of products. These are designed to meet with growing oil specification demands, as higher quality full synthetic oils and lubricants are being increasingly identified to satisfy the requirements of OEMs for even the most humble city car and super minis.

The message from Millers Oils is simple: despite the harsh economic conditions, there are opportunities for oil and lubricant businesses to increase market share through the use of innovation and invention, while good communication and co-operation with customers and suppliers remains key to maintaining positive sales figures in a tough market.

## Nano Technology innovation

In a productive start to 2009, Millers Oils launched its revolutionary new Nano Technology range, designed to radically improve the performance of transmission oil in motorsport. The new range superceded Millers Oils' highly successful and advanced BM range, which motorsport experts at the company had been supplying to race and rally teams for over five years.

The complex science behind the Nano Tech range is based on the chemical behaviour of extremely minute particles. Millers Oils is one of the first oil and lubricants company to successfully explore the use of Inorganic Fullerines (IF), a new family of additives made up of structures the size of 100 nanometres or less. To put this into perspective in terms of size, these new IF nano-particles have the same relationship to a football, as a football has to planet Earth.

When this technology is added to the formulation of an oil, it complements the existing additive technology, acting as billions of tiny ball bearings. Under heavy loads, these tiny ball bearings 'deform' and take the shape of tiny rollers. This in turn reinforces the oil molecules, which has the key advantage of reducing friction, heat and wear in transmission components.

This is crucial in motorsport, where transmission oils are often working in very extreme, hot and arduous conditions. The new lubricant range pioneered by Millers Oils is shown in testing to considerably improve performance over oils that utilise more 'conventional' solid lubricants. Reductions in friction of up to a significant 25 per cent have been recorded in tests using Nano Technology.

Millers Oils Technical Director, Martyn Mann, comments: "Nano Technology is not just a big step forward for Millers Oils, it is a leap forward in automotive oil technology. We have been rewarded for a lot of painstaking research and development over the last year, with an innovative range of products, which improves upon the already impressive and successful BM range. The response we have had so far from motorsport teams has been fantastic."

The success of this innovative technology has already been measured in environmental terms. Following the use of Nano Technology by a number of British Touring Car teams, including the eco-friendly Carbon Zero Racing Team, Millers Oils has been selected as a campaign partner of the government-accredited Energy Efficient Motorsport (EEMS) programme. This scheme aims to cement energy efficiency at the heart of modern motorsport by stimulating the use of sustainable technologies and fuels.

Dave Mott, product manager at Millers Oils, says: "Our partnership with EEMS is testament to the great strides Millers Oils continues to make in producing more energy efficient products, to help improve the performance of energy efficient fuels through use of our advanced additives."

## OEM specified synthetic oils

In further developments, as budgets and margins are cut for automotive oils suppliers, customers in the aftermarket, workshop trade, and factors, it is increasingly important that the constantly evolving oil requirements of OEMs, and the correct use of full synthetic oil grades is fully understood.

Millers Oils strongly advocates that there are definite advantages to be gained, both for workshop professionals and their customers, by using the latest high quality lubricants. Representatives at the company stress that the automotive oil sector has an influential role to play in the advice they give, and the oils they specify to customers, to ensure consistent performance in vehicles.

Dave Mott states: "While still relevant for many older cars, the days of simply recommending a generic brand of 10W-40 oil for any vehicle are long gone. Since the introduction of three way catalysts and diesel particulate filters from around 2000-2002 there has been a distinct trend of manufacturers specifying long-life fully synthetic oils for their vehicles. These oils are better suited to meet the latest demands regarding vehicle emissions, and OEM long-life servicing requirements."

Specifying a higher quality of engine oil is a simple, but very effective way of increasing car performance and squeezing out every penny's worth of fuel, while enhancing the longevity of the engine is a key advantage and primary selling point to motorists in this economic climate. Millers Oils has a range of Premium Oils recognised by some of the biggest OEM's in the UK and Europe, including the VW/Audi Group, BMW, Mercedes Benz and Porsche.

In addition, the recently upgraded Trident range of engine oils offers Original Equipment (OE) quality products that are principally aimed at the workshop trade. This range covers the most popular grades currently specified, including Trident Longlife 5W-30, a single high quality product used to meet many of the long life requirements of vehicle manufacturers.

The range, developed with the workshop trade in mind, has a very high quality specification covering ACEA C2 C3, A5/B5 requirements. In addition, Trident Longlife 5W-30 covers all of these bases and gives the opportunity to simplify the range of oils needed to be stocked by workshops and still cover the latest OE requirements.

Martyn Mann, adds: "Each product in the range has been designed to offer flexibility, without compromising on Millers Oils reputation for quality. This is especially true of the Trident Long-life 5W-30, which is quickly becoming one of the most popular grades in the range and meets the requirements of the OEMs."


**LINK**
**www.millersoils.co.uk**