



Roemex Limited

Oilfield Chemicals

ISO 9001 & ISO 14001

"Completion Chemicals and Services"

"Lubricants for Drilling"

"Pipeline Treatment Chemicals"



"Production Chemicals and Services"

"Remedial Chemicals and Services"

"Brine Additives"

ROEMEX LIMITED Speciality Oilfield Chemicals

Roemex Limited is a privately owned, independent Oilfield Chemical Company with its headquarters strategically based in Aberdeen, Scotland. We have designed, manufactured and supplied Completion and Production chemicals to the oil and gas industry in the North Sea sector and world-wide for almost 15 years.

Historically Roemex focused on problematic areas within the oil process industry. Operators could see the benefits of allowing a motivated, speciality chemical company to concentrate on their problems and by working together we were able to solve historically unresolved process problems. Over time, strong relationships developed which naturally led to an increased interest in Roemex actually managing their oilfield chemical needs. This privileged position was earned through sustained effort and delivering results again and again, keeping to our word and building trust.

Roemex are determined to ensure that all products developed will lead the field in both their efficiency and environmental classification. In order to meet these objectives, we have focused on a variety of areas within the business. We have a Health, Safety and Environment Team and Technical Specialists assigned to key areas within the Production Chemicals Division such as Emulsions, Wax, Scale and Corrosion Inhibition.

Wellbore Completion products such as Clean-Up Chemicals and Lubricants are leaders in their field. As we fully intend to maintain our position in the marketplace, we continually work on expanding our range to ensure increased efficiency and improved environmental classification.



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"Production Chemicals and Services"

Corrosion Inhibitors RX-2000 Series

GENERAL

*The **RX-2000** Series is our range of Corrosion Inhibition chemicals. The products are applied to topside process streams, main export pipelines and gas lift systems.*

DEVELOPMENT and SUPPORT

Although Roemex have a number of corrosion inhibitors on our product range, it is very rare that we would recommend a product for a specific field without initially carrying out a suite of tests. Our Aberdeen laboratories have a wide range of equipment to allow full evaluation of corrosion inhibitor performance at a range of different conditions. A combination of Corrosion Coupon evaluations, LPR Bubble tests, RCE evaluations and Flow Loop Corrosion tests, enables us to ensure that the inhibitor recommended for field trial is of the highest standard.

RESULTS

*The **RX-2000** Series of Corrosion Inhibitors, give excellent protection from corrosive processes and have been developed to be compatible with all other process chemicals.*

Emulsion Breakers RX-3000 Series

GENERAL

*The **RX-3000** Series is our range of Demulsification chemicals. As demulsifiers by their very nature, tend to be crude specific, Roemex are well equipped to formulate products for a range of field conditions.*

DEVELOPMENT and SUPPORT

Roemex believe it is essential that a series of bottle tests be carried out prior to recommending a product for field trial. As demulsifiers tend to be crude specific, we feel that these tests must be carried out before we can identify the most efficient demulsifier blend to resolve the emulsion within a particular field. Roemex have developed a demulsifier test kit in excess of 300 bases, and consequently, we are well equipped to formulate a range of demulsifiers that will suit the particular requirements of individual fields. Demulsifier evaluations can either be carried out at our Aberdeen based laboratories using produced fluids from the field in question or, preferably, can be carried out on-site using fresh field fluids. Our specialised engineers are available at all times to carry out on-site evaluations.

RESULTS

*The **RX-3000** Series of Demulsifiers give rapid separation of oil and water along with a sharp interface and good water quality. These products have been widely used in the North Sea Sector over a number of years, and their performance has resulted in acceptable discharge levels being achieved and maintained and have minimised the water content in export crude lines.*

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De-oiling / Water Clarifying RX-5300 Series

GENERAL

*The **RX-5300** Series is our range of De-oiling / Water Clarifying chemicals. They are deployed down stream of the separators on the topsides process plant. Typical dose rates are 5 - 25 ppm when optimised to field conditions.*

DEVELOPMENT and SUPPORT

Deoiler evaluations can either be carried out at our laboratories in Aberdeen using oily water from the field in question, or can be carried out on-site using fresh samples of oily water. Where possible, Roemex always prefer to carry out deoiler evaluations on-site and, as a result, we have a number of specialised engineers who would be available for field visits. Roemex have a Deoiler test kit that contains a substantial number of bases and a range of equipment that can be sent offshore to allow us to carry out on-site evaluations. Our engineers have a wide range of both laboratory and offshore experience and they are therefore in a strong position to develop products of the highest standard.

RESULTS

*The **RX-5300** Series of De-oilers / Water Clarifiers, rapidly give excellent water quality ensuring minimal oil-in-water levels when discharged, and are developed to be compatible with other process chemicals.*

Scale Inhibitors RX-6000 Series

GENERAL

*The **RX-6000** Series is our range of Scale Inhibition chemicals. These products have been formulated to provide protection against the types of scale often encountered in the field, the most common being barium sulphate and calcium carbonate. We have in-house computer software that allows us to 'predict' the type of scale that will form under various field conditions. The results from the prediction model can often help to determine the best product to inhibit the type of scale predicted to form.*

DEVELOPMENT and SUPPORT

Rather than recommending a scale inhibitor "blind", Roemex always prefer to carry out a suite of tests at our Aberdeen base before selecting an inhibitor for use in a specific field. Our laboratories have been fitted with a wide range of equipment to allow us to evaluate scale inhibitor performance at a range of different conditions. A combination of Scale Deposition modelling, Static Bottle tests and Dynamic High Temperature and Pressure P-MAC tests, enable us to select an inhibitor that will perform to the highest standard at both reservoir and topside conditions.

RESULTS

*The **RX-6000** Series of Scale Inhibitors have been successfully deployed in various fields, thus preventing the need for remedial treatments.*

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Email: info@roemex.com



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Wax Inhibitors RX-7000 Series

GENERAL

The **RX-7000** Series is our range of Wax Inhibition chemicals. They have been applied to many areas where crude often falls below the wax appearance temperature such as main export pipelines, topsides process systems and storage tanks. Included in the **RX-7000** Series are pour point depressants, which have been used to aid the flow of highly viscous crudes.

DEVELOPMENT and SUPPORT

Although Roemex have a number of wax inhibitors in our product range, it is very rare that we would recommend a product without initially carrying out a series of tests. As these products tend to be crude specific, we believe it is essential that laboratory tests are carried out to enable us to identify the most efficient formulation and therefore to ensure that product effectiveness is maximised. Our in-house laboratories have are fitted with a suite of wax deposition measurement equipment to allow us to formulate inhibitors at our Aberdeen base. A combination of Cold Finger tests, PMAC Wax Deposition tests and Coaxial Wax Shear Cell tests enables us to ensure that the inhibitor recommended for field trial is of the highest standard.

RESULTS

The **RX-7000** Series of Wax Inhibitors / Pour Point Depressants, give excellent protection against potential wax build up and prevent the need for remedial treatments to be carried out.

H₂S Removal (Scavenger) RX-5102D

GENERAL

RX-5102D was developed in 1999 as a gas purifier and not only acts as a biocide but also as a hydrogen sulphide scavenger.

DEVELOPMENT and SUPPORT

Field experience has shown that when **RX-5102D** is injected into the gas stream at a ratio of 3-10 parts **RX-5102D**: H₂S, the H₂S levels will fall dramatically. Normally injection is started at 10:1 ratio and the amount of **RX-5102D** is steadily decreased to find the minimum amount of **RX-5102D** necessary to reduce the H₂S levels to a minimum.

RESULTS

RX-5102D gives excellent protection against H₂S, ensuring reduction of the H₂S levels to a minimum/acceptable level.



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Asphaltene Dissolver RX-33/1

GENERAL

***RX-33/1** was developed in 1990 as an effective product for the removal of asphaltene deposits. The key to this product's success is its ability to completely dissolve asphaltene, and not only the 'cement' that binds asphaltene particles together.*

DEVELOPMENT and SUPPORT

***RX-33/1** is an "off the shelf" chemical and therefore no product development work is required prior to Roemex recommending this product as an Asphaltene Dissolver. However, if asphaltene samples are available, Roemex would carry out a series of lab tests that would involve varying the soak time, treatment temperature and **RX-33/1** to Asphaltene ratio. The results of these tests would allow Roemex to put forward the most appropriate pumping programme for treating the deposited Asphaltene. Whether Roemex are able to carry out lab analysis or not, treatment designs are prepared on an individual basis for all cases. This ensures the smooth deployment of treatments and the effective removal of restrictive asphaltene deposits - downhole or topside.*

RESULTS

*With respect to the performance characteristics of **RX-33/1**, the dissolution rate is found to be very rapid, especially at temperature. At temperature, treatment times to capacity are typically within 1-2 hours with the product taking up its own weight in asphaltene i.e. 1 Kg^l.*



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Wax Dissolvers

GENERAL

Roemex have a number of wax dissolvers on our range, including **RX-49LT** and **RX-4200**. Wax Dissolver **RX-49LT** was developed in 1993/94 and has proved to be a highly efficient product capable of removing deposits, even at temperatures below 5°C. Although a number of different solvents have been used in the past, the environmental properties of **RX-49LT** are superior to these solvents. Along with the above characteristics, **RX-49LT's** good ecotoxicological properties, make this wax dissolver a market-leading chemical with unequivocal success in the field.

As part of our ongoing commitment to the development of environmentally friendly products, Wax Dissolver **RX-4200** has been formulated as an equivalent to Wax Dissolver **RX-49LT**. Along with an improved environmental classification, **RX-4200** has better handling and transportation characteristics compared to **RX-49LT**.

DEVELOPMENT and SUPPORT

Our range of wax dissolvers are "off the shelf" chemicals and as such, no product development work has to be carried out either at our Aberdeen laboratories or on-site. However, if wax samples were available, Roemex would carry out a suite of tests to determine the most efficient wax dissolver from our range for a particular wax problem. Once the best product has been identified, further lab tests would be carried out to allow us to design the most cost and performance effective treatment.

As the application of our wax dissolvers will vary depending upon the treatment time available and the actual mass of wax present, Roemex believe it's extremely important for these tests to be carried. The results of these tests will allow us to put forward the most appropriate pumping programme and therefore ensure the efficient removal of any wax deposits.

RESULTS

The dissolution rates for our wax dissolvers are very rapid but are enhanced considerably when heat is applied. **RX-49LT** in particular, has been found to have very good dissolving capabilities even at low temperatures and as such this product is extremely popular for situations where heat cannot be applied to the system. When compared with more traditional wax dissolvers, only relatively small volumes of our products are required. For example, 8 parts **xylene** are required to dissolve 1 part of wax, whereas only 2 parts **RX-49LT** are required.

Our wax dissolvers are therefore a more cost-effective alternative than other solvents – without taking into consideration the environmental and human handling benefits compared to **xylene**.



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Sandwasher / Vessel Cleaner RX-9000X

GENERAL

RX-9000X is a very versatile product that can either be used as either a Topsides Vessel Cleaner or a Sandwasher. **RX-9000X** has an excellent environmental profile with an OCNS category E (UK scheme) being awarded to this product.

DEVELOPMENT AND SUPPORT

RX-9000X is an "off the shelf" chemical suitable for the applications stated above.

When used to remove oily deposits from the inside of topside vessels, Roemex would recommend applying this product at a concentration of 1 – 5 %, depending on the level of crude contamination.

RX-9000X is also widely used to clean oily sand and water prior to dumping. The oily sand is jetted with 0.1 - 1% v/v **RX-9000X** in sand-wash water. This application gives very clean sand and water along with a sharp oil/water interface. The separated oil is pumped back into the process whilst the sand and water are dumped.

RESULTS

RX-9000X is widely used as a topside vessel cleaner and as a sandwasher. This product has proved, time after time, to be very effective in the field, even in cases of severe crude contamination.

Anti-Sludge Demulsifier RX-1109X

GENERAL

Anti-Sludge Demulsifier RX-1109X is used to resolve emulsions and sludges that can often form following the application of squeeze scale inhibitors, acid frac treatments and downhole scale dissolver treatments. **RX-1109X** can be applied both 'on the fly' during pre- and post-treatment pumping, or incorporated into the main body of the treatment. Typical treatment rates are between 500 and 1500ppm, although dose rates are dependent upon the severity of the emulsion/sludge expected to form.

DEVELOPMENT AND SUPPORT

Prior to recommending a treatment rate for **RX-1109X**, wherever possible, Roemex prefer to carry out laboratory studies to determine the likelihood of an emulsion/sludge forming under the conditions specified by the client. If a sludge/emulsion is found to form in the first stages of testing, further laboratory work will be carried out to determine at what rate **RX-1109X** should be applied in the field to prevent problems being encountered during flow back.

RESULTS

RX-1109X has been found to prevent / resolve emulsions and sludges that are predicted to form following the application of squeeze scale inhibitors, acid frac treatments and downhole scale dissolvers.



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"Pipeline Treatment Chemicals"

Corrosion Inhibitors RX-2000 Series

GENERAL

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DEVELOPMENT and SUPPORT

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RESULTS

*The **RX-2000** Series of Corrosion Inhibitors give excellent protection from corrosive processes and have been developed to be compatible with all other process chemicals.*

Wax Inhibitors RX-7000 Series

GENERAL

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DEVELOPMENT and SUPPORT

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RESULTS

*The **RX-7000** Series of Wax Inhibitors / Pour Point Depressants give excellent protection against potential wax build up and prevent the need for remedial treatments to be carried out.*

"Completion Chemicals and Services" – Well Cleaners



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GENERAL

Roemex are leaders in the niche field of well cleaning and our products have never been bettered on performance. We actually formulate solutions and supply chemicals to many of the mud and chemical service companies. We are well known for our proactive approach and problem solving capabilities and are continuously developing new products in our laboratory to meet customers changing needs.

The assurance of a clean well bore prior to running the completion string has always been of critical importance. With offshore and onshore oil exploration moving into ever deeper waters/wells and in some cases harsher environments, pushing up the cost of wells, care and maintenance is of paramount importance.

A well bore that is improperly cleaned can lead to a number of problems:

- The production string and its packers acts like a scraper and any residue of oil based mud on the well bore will be pushed into the bottom of the well and could give well flow problems*
- Any OBM residue could make problems actually running the string, in the worst case pre-setting the packer*
- Any residue of OBM in the well bore will contaminate the completion fluid reducing its effectiveness to inhibit corrosion and the growth of bacteria*
- A residue OBM film will insulate parts of the casing from the inhibiting effects of the completion fluid, creating pockets of corrosion and bacteria growth*

Flushing by circulating any fluid, eg water, will remove some of the residual OBM. NTU readings will gradually reduce down to a low level indicating an apparently clean well bore. Unless suitable surfactants/solvents have been introduced, the mud film and solids will have been bypassed by the circulating fluid. This has been demonstrated in our flow loop and in the field. Observation or measurement of the solids returned will give a very good demonstration of the effectiveness of our chemical treatments.

Once we know the details of a particular mud and the well geometry, we can design a well cleaning program. This is written specifically for the particular well, and is unique to the rig being used. Recommendations include all of the important mechanics of the operation, including equipment as well as detailed logistical factors.

Supply of a specialist engineer is normally recommended, the advantage of this being assurance that the procedure is strictly adhered to. In addition, when the programme is run by a Roemex engineer, a comprehensive report is submitted on completion, focussing on lessons learnt and how the programme can be optimised for the next well.

"Lubricants for Drilling"



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WBM and Brine Lubricant RX-72TL

GENERAL

RX-72TL is a blend of nonionic and anionic surfactants in aqueous solution, designed to reduce metal to metal friction in sea-water, brines, and muds.

APPLICATION

Originally, **RX-72TL** was designed to reduce metal to metal friction in various brine systems, reducing the torque by up to 50% with both Saturated NaCl and NaBr systems. Later, laboratory tests also showed an interesting performance in mud systems giving improved lubricity in various types of mud.

Adding 2% vol **RX-72TL** into the following brine-systems, a friction coefficient factor of 0.05 was achieved: Seawater, NaCl, KCl, CaCl₂, CaCl₂/CaBr₂, CaBr₂ and CaBr₂/ZnBr₂, with densities between 1.025 and 2.30 being tested.

In addition to reducing the friction and maintaining the same lubricity effect after being filtered to 1 micron absolute, the **RX-72TL** systems are both soluble in the tested brines, and stable at higher temperatures. Systems have been tested for emulsion tendencies mixed with crudes and formation waters, and no emulsion formation was observed even at water cuts of up to 50%.

RESULTS

Stunning reductions in torque, easy handling and excellent biodegradation values – on the Norwegian Green Acceptance List.

Mud Lubricant AT-SLIDE - Coarse and Fine Beads

GENERAL

AT-SLIDE is a perfectly round copolymer used as a solid friction reducer.

APPLICATION

AT-SLIDE can be used in any water, oil, or synthetic based drilling fluids to reduce friction between the drillstring and the adjacent hole or casing.

AT-SLIDE will allow faster drilling rates with both conventional and downhole motor rotary drilling by greatly reducing wall sticking.

AT-SLIDE assures more consistent bit weights and lessens the chances of differential sticking.

AT-SLIDE is essential in deviated wells in assisting casing and wireline logging runs.

AT-SLIDE can be added as a pill or treat the entire drilling fluid system. 2-8 lbs./bbl. of **AT-SLIDE** should be used for drilling; 6-10. lbs/bbl. should be spotted in open hole for logging and casing runs.

RESULTS

Stunning reductions in torque, easy handling and excellent biodegradation values.