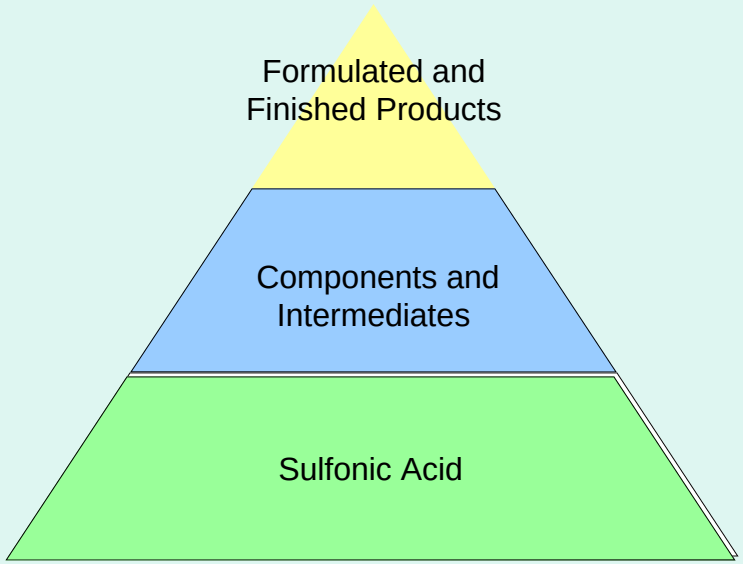
ThixoCal™

Product Line Presentation

Sulfonation Technology for Specialty Applications

February 2009

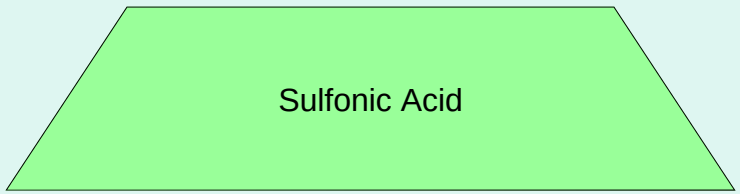


SULFONATION TECHNOLOGY for Specialty Applications

ThixoCal™ • AmorCal™ • NeutralCal™ • OLSAacid™

Sulfonation Technology

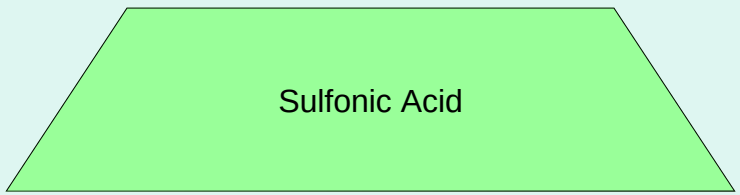
At Soltex, we utilize a unique process of **Oleum Sulfonation** to manufacture specialty performance compounds for a number of industries.



Sulfonation Technology

Oleum Sulfonation offers advantages over other methods of sulfonation, most notably allowing for versatility in feedstock selection.

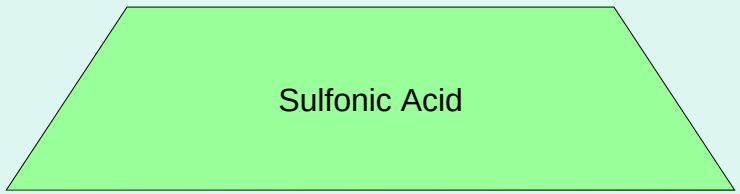
Using this method, we can choose feedstocks or blend feedstocks to build products that are truly application specific.



OLSAacid™

Oleum sulfonation allows us to achieve the following desirable characteristics:

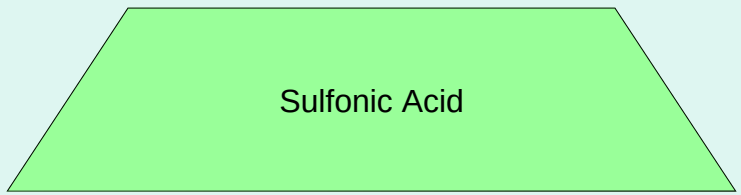
- ✓ High Activity (90%)
- ✓ **Very Low Free Acid**
- ✓ **Very Low Odor**
- ✓ **Very Light Color**



OLSA™ 90/470

May be neutralized to produce synthetic sulfonates such as:

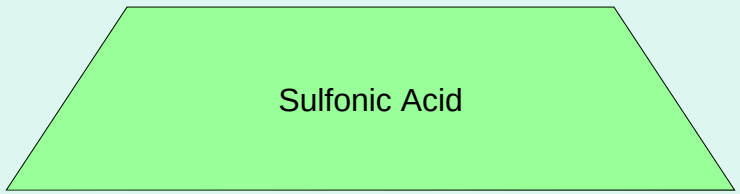
Barium Sulfonate
Calcium Sulfonate
Sodium Sulfonate
Magnesium Sulfonate



OLSA™ 90/470

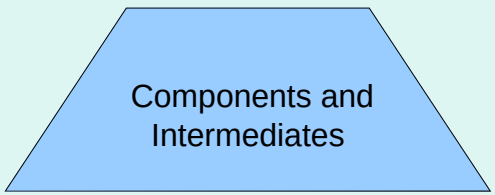
The oleum sulfonation process makes this acid more amenable to gelling conversion than SO_3 produced counterparts.

- ✓Calcium Sulfonate Greases
- ✓Thixotropic Coating Bases
- ✓Rheology Modifiers



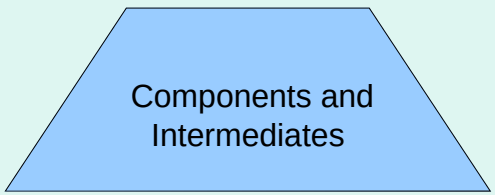
NeutralCal™ 10

- ✓ **Component product**
- ✓ **High active content ~ 60%**
- ✓ **Used in combination with other chemicals to formulate rust preventives, lubricating oils, and grease additives**
- ✓ **Strong polarity imparts rust and corrosion protection**
- ✓ **Oleum Process – very low to no chlorides (<50 ppm)**
- ✓ **May enhance dispersion of pigments, graphite, and molybdenum disulfide**



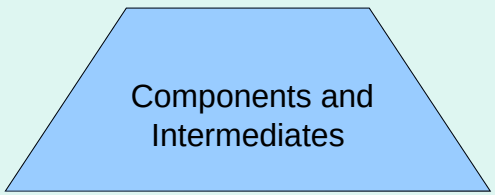
AmorCal™ 400M

- ✓ **Intermediate when used as a feedstock for conversion to calcium sulfonate grease or other gelled components for coatings use.**
- ✓ **Component product when used in combination with other chemicals to formulate rust preventives, lubricating oils, and grease additives**
- ✓ **Excellent solubility in all types of formulations**
- ✓ **Strong polarity imparts rust and corrosion protection**
- ✓ **Oleum Process – very low to no chlorides (<50 ppm)**



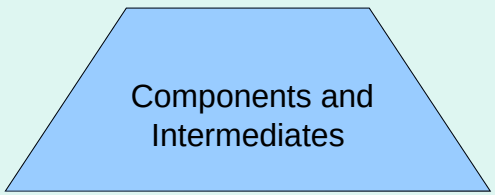
ThixoCal™ 2000 & 2000A

- ✓ **Highly viscous gelled calcium sulfonate in an oil carrier**
- ✓ **Contains no solvent**
- ✓ **High Non-Volatiles ~98% (Oil is a large portion of the Non-Volatile content)**
- ✓ **Crystalline nature provides barrier protection**
- ✓ **Polarity imparts rust and corrosion protection**
- ✓ **Oleum Process – very low to no chlorides (<50 ppm)**
- ✓ **Overbasing helps coatings withstand severe atmospheric conditions such as acid environments or ocean air**



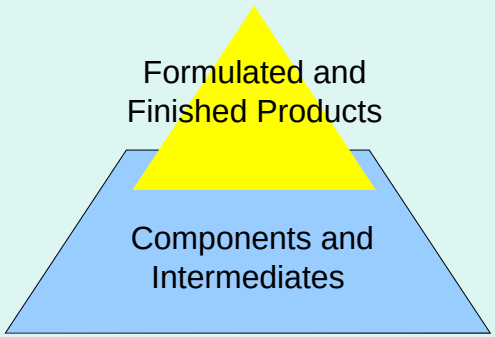
ThixoCal™ 2000 & 2000A

- ✓ **Component used as a Base Product for formulating Oil Based or Emulsifiable Rust Preventive Compounds, and Hot Melts**
- ✓ **Applications include bearings, hinges, wire rope and cable lubricants, base for hot melt dips and extruded hot melt sealants**
- ✓ **Deposits oily film with good lubricating properties**
- ✓ **Formulate with Oils, Drying Oils (Boiled Linseed Oil), Waxes, Polymers, and Tackifiers**
- ✓ **Use Fatty acids/amines/amides or non-ionics for emulsification**
- ✓ **Lighter color than competitive products**
- ✓ **2000A contains a proprietary wax component for added barrier protection and slightly less tacky film**



ThixoCal™ 3000/A

- ✓ **Moderately formulated gelled calcium sulfonate in mineral spirits carrier**
- ✓ **Polarity imparts rust protection, even when surface has been marred**
- ✓ **Crystalline structure and added proprietary wax components offer barrier protection**
- ✓ **May be used as a base for further formulating with waxes, asphalts, resins, oils, etc.**
- ✓ **Yields a waxy film which is somewhat tacky**



ThixoCal™ 4400

- ✓ **Emulsion of ThixoCal™ 2000 and other film forming ingredients**
- ✓ **Does NOT contain morpholine**
- ✓ **Very highly formulated; contains drying additives**
- ✓ **Low to no VOC's**
- ✓ **Can be used as is or further formulated**
- ✓ **Impervious to water in approximately 2 hours after application**

Formulated and
Finished Products

ThixoCal™ 4500

- ✓ **Emulsion of ThixoCal™ 2000 and other film forming ingredients**
- ✓ **Contains morpholine**
- ✓ **Not highly formulated**
- ✓ **Low to no VOC's**
- ✓ **Can be used as is or further formulated**
- ✓ **Impervious to water in approximately 90 minutes after application**

Formulated and
Finished Products

ThixoCal™ 4600

- **Environmentally friendly emulsion of ThixoCal™ 2000**
- **Amine Free**
- **Not highly formulated**
- **Low to no VOC's**
- **Impervious to water in about 90 minutes after application**

Formulated and
Finished Products

ThixoCal™ 5300 & 5400

- ✓ **Formulated Product used as an Underbody and Frame Coat by Aircraft, Truck, and Automotive OEM's.**
- ✓ **Also used in Ballast Tank Coatings**
- ✓ **Good candidate as a Rust Inhibitor for longer term storage of metal parts, equipment, and machinery**
- ✓ **Firm, waxy film with extremely good rust protection**
- ✓ **May be used as is or further formulated with Waxes, Petrolatums, Oxidates, Resins, and Dryers**
- ✓ **Polarity imparts rust and corrosion protection**
- ✓ **Crystalline nature provides barrier protection**
- ✓ **Excellent Salt Spray resistance**

Formulated and
Finished Products

ThixoCal™ 5752A, 5752BL

- ✓ **Formulated oily corrosion preventive**
- ✓ **Deposits a somewhat tacky film with advanced penetrating characteristics**
- ✓ **Designed for automotive aftermarket underbody; temporary or prolonged protection of railroad equipment or other goods stored outdoors; and any structure where penetrating characteristics are needed and a tacky film can be tolerated**
- ✓ **5752BL is a dyed black version of 5752A**

Formulated and
Finished Products

ThixoCal™ 8100

- ✓ **Highly Formulated Product used in Industrial Maintenance Coatings. Intended for Interior and Exterior Structural Steel, Bridge Coatings, Utility Tower Coatings, Steel Roofing, Storage Tank Exteriors, and Pipe Racks**
- ✓ **Dry Film**
- ✓ **Formulate with Pigments, Light and UV Stabilizers**
- ✓ **Can be formulated to have a very tough, dry film with high build**
- ✓ **High non-volatiles ~ 68 to 74%**
- ✓ **Very little surface preparation needed**

Formulated and
Finished Products

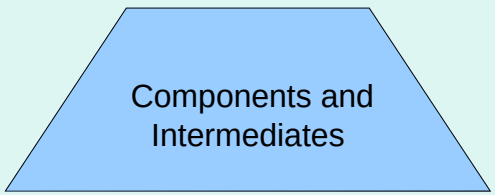
ThixoCal™ 8200

- ✓ **Companion product to ThixoCal 8100**
- ✓ **Highly formulated**
- ✓ **Excellent penetrating characteristics**
- ✓ **Designed to be applied to hard to reach structural areas prior to an overcoat application of ThixoCal™ 8100**
- ✓ **Very little surface preparation required**

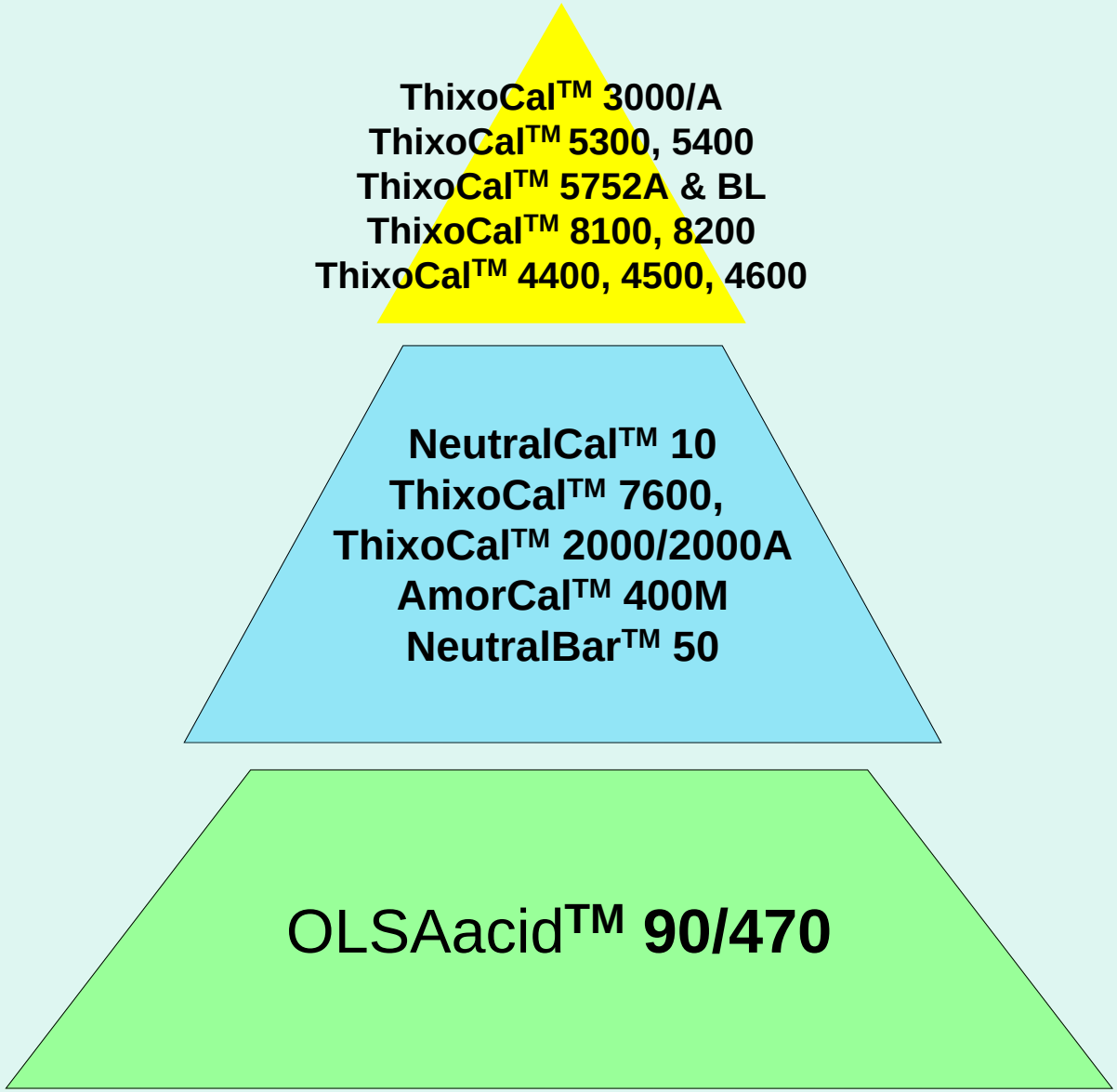
Formulated and
Finished Products

ThixoCal™ 7600

- ✓ **Component used as a Base Product for formulating rust preventive compounds primarily for automotive OEM and aftermarket coating applications**
- ✓ **Formulate with Waxes, Petrolatums, Resins, Asphalts or other materials with good Aliphatic Compatibility**
- ✓ **Polarity imparts rust and corrosion protection**
- ✓ **Crystalline nature provides barrier protection and enhances rheology in solvent based coatings**
- ✓ **Oleum Process – very low to no chlorides (<50 ppm)**
- ✓ **Overbasing helps coatings withstand severe atmospheric conditions such as acid environments or ocean air**
- ✓ **Light color; dries clear**



Products Currently Available



More products under development