

CAPABILITIES

Custom Synthesis, LLC is an ISO 9001 and Kosher approved manufacturing facility.

REACTION CHEMISTRY

1. Fatty Esters
 - A complete line of esters based on most fatty acids and alcohols covering a wide range of uses from lubricants for industrial and metal working, plasticizers, personnel care and cosmetics, and food additives.
2. Phosphate Esters
 - Acid esters via Phosphoric Anhydride and Polyphosphoric Acid synthesis routes.
 - Sodium and Potassium salts of Phosphate Esters ranging from 30 - 80% active.
3. Carboxylate type surfactants where an alcohol is reacted with Sodium Chloroacetate to yield a crypto anionic which can function like its phosphate Counterpart.
4. Sulfated Alcohols via the Sulfamic acid route. Custom Synthesis, LLC is a major supplier of sodium 2-Ethyl Hexanol Sulfate (40% solids). This is similar in the industry to Sulfatex OA. Our name is Custom 8425. We also manufacture sulfated NP-5. These reactions take place in our 2000 gallon glass lined reactor.
5. High temperature esters made from mono and polyfunctional alcohols and acids. Our hot oil equipment is capable of performing at temperatures up to 280 C.
6. Amidations where a fatty acid is reacted with a polyfunctional amine to yield an amido-ester for use in fabric softeners.
7. Kosher Esters ranging from Kosher Butyl Stearate to products such as Kosher PEG Stearates, Palmitates, Myristates, and Oleates. All products are manufactured under the supervision of Organized Kashrus Laboratories.

EMULSION CHEMISTRY

1. Our reactors are tag tested such that we can make polyethylene emulsions throughout the functional range.
2. We manufacture both micro and macro silicone emulsions in our shear mixing vessel (Meyers mixer).

BLENDING AND FORMULATING ABILITIES

1. The product areas serviced include:
 - Wet processing (preparation, dyeing, and finishing)
 - Garment washing (stone washing of denim)
 - Paper chemicals (Fluorochemicals for paper treatment under CFR 21 170.176)
 - Fiber finishing
 - Personal Care and Cosmetics
2. Types of custom formulated products:
 - Wetting agents
 - Scouring agents
 - Chelates
 - Fabric Softeners
 - Bleaching auxiliaries
 - Silicone and non-silicone defoamers
 - Dye dispersants and levelers
 - Grease hold out paper additives (fluorochemicals)
 - Lubricants (cationic, nonionic, anionic)
 - Cellulase and amylase enzymes.

CAPACITY

BLENDING

- One 500 gallon stainless steel mixing vessel jacketed for steam/cooling.
- One 1,500 gallon stainless steel mixing vessel, sweep blade and high sheer blade, jacketed for steam /cooling.
- One 1,500 gallon stainless steel Meyers Mixing vessel, sweep blade and two high sheer blades, jacketed for steam/cooling.
- One 2,000 gallon stainless steel mixing vessel jacketed for steam /cooling.
- One 2,500 gallon stainless steel mixing vessel jacketed for steam/cooling.
- One 5,500 gallon stainless steel mixing vessel jacketed for steam/cooling.
- Four 6,600 gallon stainless steel vessels jacketed for steam/cooling
- One 6,500 gallon stainless steel mixing vessel jacketed for steam/cooling.
- Drum style Flaker unit capable of flaking between 2 and 12 drums per hour depending on the material.

REACTORS

- One 2,000 gallon glass lined Pfaudler reactor jacketed for steam /cooling. Fitted with condenser, vacuum, receiver tank, and scrubber.
- One 3,000 gallon stainless steel reactor jacketed for hot oil with internal coils for steam/cooling. Pressure tested to 100 psi. fitted with condenser, vacuum and receiver tank.
- One 7,000 gallon stainless steel reactor jacketed for hot oil with internal coil for steam/cooling. Pressure tested to 100 psi. Fitted with condenser, vacuum, and receiver tank.
- One 8,000 gallon esterification stainless steel reactor designed to produce high purity esters. Vessel is pressure tested to 100 PSI. It is heated by steam and hot oil and cooled through a dedicated 500 ton cooling tower.
- One 100 gallon Stainless steel Pilot Plant reactor jacketed for hot oil with internal coil for steam/cooling. Pressure rated to 55 psi. Fitted with condenser, vacuum, and receiver tank.
- One 50 gallon glass lined De Dietrich Pilot Plant reactor jacketed for steam/cooling. Fitted with condenser, vacuum, and receiver tank.