

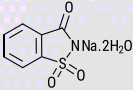
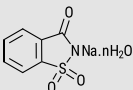

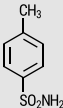
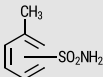
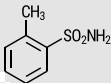
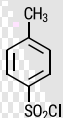

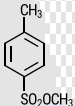
## PRODUCT LIST

# JMC

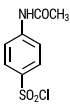
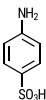

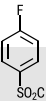
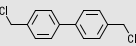
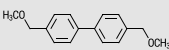
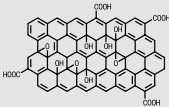
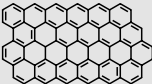
CREATING SWEETNESS AND PURE CHEMISTRY



# PRODUCT LIST

Product	Structural Formula	Use
Sodium saccharin 15% water		<ul style="list-style-type: none"> <li>• Food additives (confectionery, baked goods, cereals, chewing gum, jams, ketchup, coffee sweetener, nutrient supplement foods)</li> <li>• Personal care (toothpaste, mouth wash)</li> </ul>
Sodium saccharin 6% water		<ul style="list-style-type: none"> <li>• Low-calorie sweetener</li> <li>• Beverages</li> <li>• Pharmaceuticals</li> <li>• Cosmetics</li> </ul>
Insoluble saccharin		<ul style="list-style-type: none"> <li>• Electroplating solutions</li> <li>• Animal feed</li> </ul>
para toluenesulfonamide (PTSA)		<ul style="list-style-type: none"> <li>• Plasticizer in thermosetting resins</li> <li>• Raw material for fluorescent pigments and dye stuffs</li> </ul>
mixed ortho/para toluenesulfonamide (OPTSA)		<ul style="list-style-type: none"> <li>• Plasticizer in thermosetting resins</li> <li>• Raw material for fluorescent pigments and nail polish resins</li> <li>• Plasticizer in melamine coatings and laminating resins</li> </ul>
ortho toluenesulfonamide (OTSA)		<ul style="list-style-type: none"> <li>• Raw material for saccharin production</li> <li>• Pharmaceutical intermediate</li> </ul>
para toluenesulfonyl chloride (PTSC)		<ul style="list-style-type: none"> <li>• Raw material for dye stuff</li> <li>• Foaming agent</li> <li>• Agricultural chemical</li> </ul>
mixed ortho/para toluenesulfonyl chloride (OPTSC)		<ul style="list-style-type: none"> <li>• Raw material for fluorescent pigments and dye stuffs</li> <li>• Foaming agent</li> <li>• Agricultural chemical</li> </ul>
para toluenesulfonic acid methyl ester (PTSM)		<ul style="list-style-type: none"> <li>• Pharmaceutical intermediate</li> </ul>
Potassium sulfate	$K_2SO_4$	<ul style="list-style-type: none"> <li>• High quality agriculture fertiliser. Particularly suited to pineapples, bananas and other high value crops.</li> </ul>
Sodium bisulfite	$NaHSO_3$	<ul style="list-style-type: none"> <li>• Bleaching agent</li> </ul>
Chlorosulfonic acid	$HSO_3Cl$	<ul style="list-style-type: none"> <li>• Material for shampoo/detergent</li> <li>• Foaming agent</li> <li>• Material for textile dyeing agent</li> </ul>

# PRODUCT LIST

Product	Structural Formula	Use
Hydrochloric acid	HCl	• Industrial chemical
N-acetylsulfanilyl chloride (N-ASC)		• Antibiotic pharmaceutical intermediate • Material for fluorescent paints
Sulfanilic acid		• Material for fluorescent textile dyeing agent
Acetanilide		• Raw material for N-acetylsulfanilyl chloride production • Pharmaceutical intermediate
4-fluorobenzenesulfonyl chloride (4-FBSC)		• Pharmaceutical intermediate
4,4'-bis(chloromethyl)-1,1'-biphenyl (BCMB)		• Epoxy molding compound for electronics
4,4'-bis(methoxymethyl)-1,1'-biphenyl (BMMB)		• Epoxy molding compound for electronics
Graphene Oxide		• Composites
Reduced Graphene Oxide (Graphene)		• Electronics

## Core Technologies

Chlorosulfonation / sulfonation:  $\text{ArH} \rightarrow \text{ArSO}_2\text{Cl}, \text{ArSO}_3\text{H}$

Chlorination:  $\text{R-OH} \rightarrow \text{R-Cl}$

Chloromethylation:  $\text{ArH} \rightarrow \text{ArCH}_2\text{Cl}$

Friedel Craft Reactions:  $\text{ArH} + \text{RX} \rightarrow \text{ArR}$      $\text{ArH} + \text{RCOX} \rightarrow \text{ArCOR}$

Oxidation:  $\text{ArCH}_3 \rightarrow \text{ArCOOH}$

Oxidation: **graphite**  $\rightarrow$  **graphene oxide**  $\rightarrow$  **reduced graphene oxide**

## About JMC Corporation

**JMC** (originally the Jeil Moolsan Company) was established in 1953 and is a world leader in the field of saccharin and sulfur-based fine chemicals. JMC was acquired by the KISCO group in 2004. JMC's research and development leverages the capabilities across the KISCO group and JMC provides raw materials for many other products manufactured by KISCO. JMC produces materials for fluorescent pigment/resins, medicinal intermediates, electronics, plastics and agriculture. JMC is also a large-scale manufacturer of saccharin, a safe, artificial sweetener that enables a drastic reduction in sugar content. We supply saccharin to some of the world's largest, quality-oriented, multinational food and medicine producers.

## About KISCO Group

**Kyung-In Synthetic Corporation (KISCO)** is a large-scale developer and manufacturer of dyes, inks, fine chemicals and other functional materials that has been operating for over 40 years. KISCO has 3 subsidiaries, JMC, DKC and Wisechem that together make up the KISCO group. The combined KISCO group has a market capitalisation of around \$US250M and had sales of over \$US 300M in 2016. The group employs over 850 staff at 8 manufacturing plants in South Korea as well as one each in China and Turkey. We have over 80 R&D staff and are supported by representatives and agents in over 60 different countries. KISCO core values include safety, the environment, respect for people and delivering on our commitments to our customers.

KISCO has a track record of successful, long-term partnerships and extensive experience with establishing and managing joint ventures. Through these partnerships KISCO is constantly expanding our range of activities and working with our partners to open up new markets and new applications for our technologies. We are based in Korea but our business is global.

### Our name

Kyung-In refers to the region between Seoul and Incheon, Korea's major international airport. The Kyung-In region is home to thousands of companies providing ready access to a large range of suppliers and customers.

