more reliable, sustainable, high-quality phosphates supply
RISING TO MEET THE DEMAND FOR PHOSPHATES

As the global population continues to rise, so does the demand for phosphates in food and beverage processing. The global food phosphate market is expected to cross $2.4 billion by 2024\(^1\), as forecast by strong growth indicators in dairy, bakery, beverage, and meat processing industries.

In order to meet this rising demand, the food and beverage industry needs a reliable, high-quality, and sustainable supply of phosphates. Xingfa is the global leader in specialty phosphates manufacturing, serving more than 50 countries for over 30 years. By owning and operating phosphate rock mines and derivative manufacturing plants using hydropower stations, we have control over the entire supply chain from rock to ingredient, providing our customers with unmatched reliability, traceability, and sustainability.

\(^1\)Global Market Insights, Inc.

FOOD AND BEVERAGE MARKETS WE SERVE

We offer specialty ingredients to the food and beverage industry to meet ever-increasing demand. Our diverse portfolio of phosphates and compound food ingredients enables us to offer innovative solutions for your current and evolving needs.

<table>
<thead>
<tr>
<th>Products</th>
<th>Meat, Poultry &amp; Seafood</th>
<th>Baking</th>
<th>Dairy</th>
<th>Beverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric Acid Food Grade</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Monosodium Phosphate (MSP)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disodium Phosphate (DSP)</td>
<td></td>
<td>X</td>
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<tr>
<td>Trisodium Phosphate (TSP)</td>
<td>X</td>
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<tr>
<td>Sodium Tripolyphosphate (STPP)</td>
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<tr>
<td>Tetrasodium Pyrophosphate (TSPP)</td>
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<tr>
<td>Sodium Acid Pyrophosphate (SAPP)</td>
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<tr>
<td>Trisodium Acid Pyrophosphate (TSAPP)</td>
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<tr>
<td>Sodium Hexametaphosphate (SHMP)</td>
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<tr>
<td>Tetrapotassium Pyrophosphate (TKPP)</td>
<td></td>
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<td>X</td>
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<tr>
<td>Dicalcium Phosphate (DCPD)</td>
<td></td>
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<td>X</td>
<td></td>
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<tr>
<td>Sodium Trimetaphosphate (STMP)</td>
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<tr>
<td>Monoammonium Phosphate (MAP)*</td>
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<tr>
<td>Diammonium Phosphate (DAP)*</td>
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</tr>
</tbody>
</table>

*New product coming soon
Phosphoric Acid Food Grade
Chemical formula: $\text{H}_3\text{PO}_4$
Molecular weight: 97.99
Standard executed: GB 3149-2004/FCC
Properties: Under normal temperature, phosphoric acid is a colorless, transparent, viscous, liquid in appearance. It is a tri-basic acid with moderate acidity.
Usage: Phosphoric Acid Food Grade is used as a clarifier, an acid ingredient or a yeast nutrient, and in the production of food grade phosphates.
Packaging: 1000L IBC (1700kg/tank, IBC), 200L drum (330kg/drum), 25L drum (35KG/drum) and ISO-TANK.

Sodium Tripolyphosphate (STPP)
Chemical formula: $\text{Na}_5\text{P}_3\text{O}_{10}$
Molecular weight: 367.86
Standard executed: GB 25566-2010/FCC
Properties: White powder or granular in appearance. Soluble in water. Available in different types according to request, including bulk density (0.5-0.9g/cm³), solubility (10 gram, 20 gram in 200ml water), quick dissolve, and large granular.
Usage: Isolation of multivalent ions and prevention of oxidation and corrosion. Can also be used as a water retention agent, as well a fat and protein emulsifier.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

Trisodium Phosphate (TSP)
Chemical formula: $\text{Na}_3\text{PO}_4$
Molecular weight: 163.94
Standard executed: GB 25565-2010/FCC
Properties: White powder or granular in appearance.
Usage: Used as a water-retention agent and to improve pH values in the food industry. Used in many applications associated with fruit drinks, milk, meat, cheese products, and canned food.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

Sodium Acid Pyrophosphate (SAPP)
Chemical formula: $\text{Na}_2\text{H}_2\text{P}_2\text{O}_7$
Molecular weight: 221.94
Standard executed: GB 25567-2010/FCC
Properties: White powder or granular in appearance. Soluble in water.
Usage: Used as a leavening agent, reducing zymosis time. Can also be used as a water-retention agent and a quality improver for meat and seafood processing.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

Disodium Phosphate (DSP)
Chemical formula: $\text{Na}_2\text{HPO}_4$
Molecular weight: 141.96
Standard executed: GB 25568-2010/FCC
Properties: White powder in appearance. Easy deliquescence. Soluble in water, and the water solution is a weak alkaline base, insoluble in alcohol.
Usage: Used as a quality improver, an emulsifier, a nutrition enhancer, a fermentation aid, and a binder in the food industry.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

Tetrasodium Pyrophosphate (TSPP)
Chemical formula: $\text{Na}_4\text{P}_2\text{O}_7$
Molecular weight: 265.90
Standard executed: GB 25557-2010/FCC
Properties: White crystalline or powder in appearance.
Usage: Mainly used in meat and seafood processing as a water-retention agent, a stabilizer for natural pigments, and to prevent fat corruption. It can also be used as a pH modifier, an emulsifier, a quality improver agent in dough, and a nutrient supplement.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

Monosodium Phosphate (MSP)
Chemical formula: $\text{NaH}_2\text{PO}_4$
Molecular weight: 119.98
Standard executed: GB 25564-2010/FCC
Properties: White powder or granular in appearance. Easily soluble in water, but insoluble in organic solvents.
Usage: Used as a buffer, an emulsifier, and a nutritional supplement in foods and beverages.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

Trisodium Acid Pyrophosphate (TSAPP)
Chemical formula: $\text{Na}_3\text{HP}_2\text{O}_7\cdot\text{nH}_2\text{O}$
Molecular weight: 261.95 (n=1)
Properties: White powder or granular in appearance. Soluble in water.
Usage: Used for moisture regulation and as an emulsion stabilizer. Can also be used as a buffering, chelating, and/or emulsifying agent.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.
**Sodium Hexametaphosphate (SHMP)**
Chemical formula: \((NaPO_3)_6\)
Molecular weight: 611.82
Standard executed: GB 1890-2005/FCC
Properties: White powder, granular, or flake in appearance. Easily soluble in water, but insoluble in organic solvents.
Usage: In the food industry it can be used as an ingredient, nourishing agent, quality improver, pH regulator, metal ions chelating agent, adhesive, and leavening agent.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

**Dicalcium Phosphate (DCPD)**
Chemical formula: \(CaHPO_4 \cdot 2H_2O\)
Molecular weight: 172.09
Standard executed: GB 1889-2004/FCC
Properties: White monoclinic crystalline powder in appearance.
Usage: Used as a leavening agent, dough conditioner, nutritional supplement, and emulsion stabilizer in the food industry. Can be used in baked products as a leavening agent, or as a compound bread and fried food improver.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

**Sodium Hydroxide (Caustic Soda)**
Chemical formula: \(NaOH\)
Molecular weight: 40.00
Standard executed: GB 5175-2008/FCC
Properties: Solid base or flaky base. Strong corrosive that can damage cellulose and skin.
Usage: In the food industry, used as neutralization, peeling, bleaching, deodorization, detoxification, and/or detergent agent.
Packaging: 25kg woven bags.

**Sodium Trimetaphosphate (STMP)**
Chemical formula: \((NaPO_3)_3\)
Molecular weight: 305.89
Standard executed: HG/T 4515-2013/FCC
Properties: White powder or granular in appearance. Soluble in water, insoluble in organic solvents.
Usage: Used in the food industry as a starch modifier, as a water-retention agent in meat processing, as a stabilizer in cheese and dairy products, and as a stabilizing agent to protect food from discoloration and the decomposition of vitamin C.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

**Dipotassium Phosphate (DKP)**
Chemical formula: \(K_2HPO_4\)
Molecular weight: 174.18
Standard executed: GB 25561-2010/FCC
Properties: White crystalline or powder in appearance.
Usage: Used as a buffer, chelating agent, yeast active agent, emulsifying salt, and antioxidant synergist in the food industry. Also used as a stabilizer for coffee mate and soy milk drink as a nutritional, bacteria-blocking agent in fermentation processes.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

**Monopotassium Phosphate (MKP)**
Chemical formula: \(KH_2PO_4\)
Molecular weight: 136.09
Standard executed: GB 25560-2010/FCC
Properties: White powder or granular in appearance.
Usage: Widely used as a bacterial culture agent, a flavoring agent for synthetic sake, a raw material in potassium metaphosphate production, and a culture, reinforcing, leavening, and/or fermentation agent in yeast.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

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Chemical formula: \(K_2HPO_4\)
Molecular weight: 174.18
Standard executed: GB 25561-2010/FCC
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Molecular weight: 136.09
Standard executed: GB 25560-2010/FCC
Properties: White powder or granular in appearance.
Usage: Widely used as a bacterial culture agent, a flavoring agent for synthetic sake, a raw material in potassium metaphosphate production, and a culture, reinforcing, leavening, and/or fermentation agent in yeast.
Packaging: 25kg/50lb kraft paper bags, 1000kg jumbo bags.

**Tetrapotassium Pyrophosphate (TKPP)**
Chemical formula: \(K_4P_2O_7\)
Molecular weight: 330.34
Standard executed: GB/T 3591-2009/FCC
Properties: White powder or granular in appearance. Moisture absorbing, soluble in water but insoluble in ethanol.
Usage: Used as an emulsifier, chelating agent, dispersant, and buffering agent.
Packaging: 25kg kraft paper bags, 1000kg jumbo bags.
SPECIALTY COMPOUNDS
FOR MEAT PROCESSING

COMMUNIUTED MEAT PRODUCTS

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-M502B</td>
<td>Emulsified meat product</td>
<td>0.3%-0.5% of the final product</td>
</tr>
<tr>
<td>XF-M501A</td>
<td>Meatballs</td>
<td></td>
</tr>
<tr>
<td>XF-M501B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Benefits:
- Enhances water-retention capacity and adhesiveness of comminuted meat products and increases yield of final products
- Extracts salt-soluble protein effectively, improving the elasticity and texture of meat products
- Improves the antioxidative effect to prolong shelf life

PREPARED MEAT PRODUCTS

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-M502A</td>
<td>Prepared meat product</td>
<td>0.3%-0.5% of the final product</td>
</tr>
<tr>
<td>XF-W501</td>
<td>Prepared meat product</td>
<td>1.2%-2.0% of the final product</td>
</tr>
</tbody>
</table>

Benefits:
- Dissolves quickly in ice cold water
- Reduces the loss of processing and cooking, improving yield effectively
- Improves flavor retention and color during processing, keeping tenderness

INJECTED MARINATION

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-M505A</td>
<td>Injected marination meat product</td>
<td>0.3%-0.5% of the final product</td>
</tr>
<tr>
<td>XF-H</td>
<td>Injected marination meat product</td>
<td>1.2%-2.0% of the final product</td>
</tr>
</tbody>
</table>

Benefits:
- Dissolves quickly for superior dispersion performance in ice cold water
- Facilitates processing with good tumbling performance
- Increases water-retention capacity, improving product yield
- Retains more juice and nutrients providing succulent and tender texture
# SPECIALTY COMPOUNDS FOR SEAFOOD PRODUCTS

## MOLLUSKS

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-S101</td>
<td>Acid scavenger for squid</td>
<td>Soaking concentration 1.5%-3%</td>
<td>• Removes unpleasant taste</td>
</tr>
<tr>
<td>XF-S102</td>
<td>Peeled squid and other mollusks</td>
<td></td>
<td>• Improves water binding capacity, aiding in preservation</td>
</tr>
<tr>
<td>XF-S106</td>
<td>Products such as squid with skin</td>
<td></td>
<td>• Reduces weight loss during processing, freezing, and cooking</td>
</tr>
</tbody>
</table>

## CRUSTACEANS

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-M505B</td>
<td>Shrimp and shellfish</td>
<td>Soaking concentration 2%-4%</td>
<td>• Dissolves quickly in ice cold water</td>
</tr>
<tr>
<td>XF-M502C</td>
<td></td>
<td></td>
<td>• Reduces juice loss during processing, thawing, and cooking, ultimately improving product yield</td>
</tr>
<tr>
<td>XF-M505C</td>
<td></td>
<td></td>
<td>• Protects the natural color and flavor of seafood</td>
</tr>
<tr>
<td>XF-S506</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XF-W301</td>
<td></td>
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</tr>
</tbody>
</table>

## TILAPIA FILLETS

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-S106C</td>
<td>Tilapia fillets</td>
<td>Soaking concentration 1%-3%</td>
<td>• Improves water-binding capacity and quality, improving product yield</td>
</tr>
<tr>
<td>XF-S118</td>
<td></td>
<td></td>
<td>• Reduces juice loss during freezing and storage</td>
</tr>
<tr>
<td>XF-S108</td>
<td></td>
<td></td>
<td>• Improves appearance and retains natural flavors and textures of fillets</td>
</tr>
<tr>
<td>XF-W201</td>
<td></td>
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</tr>
</tbody>
</table>

## COD FILLETS AND FRESHWATER FISH FILLETS

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-M502C</td>
<td>Basa fillets, grass carp fillets, and weever fillets</td>
<td>Soaking concentration 1%-3%</td>
<td>• Improves water-binding capacity and quality, improving product yield</td>
</tr>
<tr>
<td>XF-S104</td>
<td>Cod fillets</td>
<td></td>
<td>• Reduces juice loss during freezing and storage</td>
</tr>
<tr>
<td>XF-M2</td>
<td>Cod fillets</td>
<td></td>
<td>• Improves appearance and retains natural flavors and textures of fillets</td>
</tr>
</tbody>
</table>

## SURIMI (IMITATION CRAB)

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-M301B</td>
<td>In surimi and surimi products</td>
<td>0.3%-0.5% of the final product</td>
<td>• Improves water-binding capacity, reduces weight loss</td>
</tr>
<tr>
<td>XF-M501B</td>
<td>Surimi products</td>
<td></td>
<td>• Prevents refrigeration degeneration of surimi products, prolonging shelf life</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Enhances the gel strength adhesiveness of surimi products</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Improves the elasticity and smooth texture of surimi products</td>
</tr>
</tbody>
</table>
BAKING POWDER

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>General (Mainly used for baking)</td>
<td>0.8-2% of flour weight</td>
</tr>
<tr>
<td>Type B</td>
<td>Fried type (For fried food)</td>
<td>3% of flour weight</td>
</tr>
</tbody>
</table>

Benefits:
- Double-acting, aluminum-free
- Designed to release an exact amount of gas during baking
- Guaranteed for consistency and high quality
- Gives baked goods structure and greatly enhances taste and texture

QUALITY IMPROVERS FOR NOODLES

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-N</td>
<td>Noodles</td>
<td>0.2-0.5% of flour weight</td>
</tr>
</tbody>
</table>

Benefits:
- Improves brightness and color stability during processing
- Increases overcooking tolerance
- Enhances elasticity of noodle
- Emulsifying oil improves moisture retention of raw noodles

CHEESE

<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Recommended dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>XF-C</td>
<td>Cheese</td>
<td>0.3%-0.5% of the final product</td>
</tr>
</tbody>
</table>

Benefits:
- Improves the structure and texture of cheese products
- Reduces the loss of moisture during storage and extends shelf life
- Better ion exchange with no creaming reaction

Xpedite Your R&D With Custom Compounds

In addition to offering specific products for each of these industries, Xingfa can create custom compounds based on your specific needs. Our team of innovative food scientists, fully equipped with state-of-the-art laboratories, is ready to help you solve your most difficult challenges.
THE POWER OF X

Xtreme reliability
For more than 30 years, Xingfa has optimized its vertically integrated operations to successfully develop, produce, and market phosphorus-based fine chemicals to more than 50 countries around the globe. Our team of more than 10,000 employees takes pride in delivering unmatched control of raw materials. Our team of more than 10,000 employees takes pride in delivering unmatched control of raw materials across food and beverage, agriculture, pharma and nutrition, and industrial markets — from our operations to yours.

Xceptional quality
Our superior audit results and industry certifications, including ISO9001, ISO14001, ISO18000, ISO22000, NSF International, KOSHER, HALAL, and BRC, confirms Xingfa’s compliance to the highest manufacturing standards. We are pleased to accommodate our customers’ audit requirements.

Xcellence in sustainability
Our commitment to sustainable energy not only makes us a green leader for the industry, but also provides cost control for our partners. We own and operate more than 30 hydroelectric stations that generate up to 50% of our annual energy requirements and power our operations. Not only do we offer reliable phosphates supply, but we also deliver peace of mind that our products have been produced ethically and responsibly.

Xpertise you can count on
Serving a number of major corporations globally, we partner with end users and distributors to deliver an always-reliable, high-quality phosphate supply. Our food grade STPP and SAPP, SHMP, Tech Grade SHPP, DMSO, and Yellow Phosphorous ranked first at capacity and sales globally.

Xplore how we can help you
Talk to a Xingfa team member or visit xingfausa.com to learn more about our high-quality products and services.