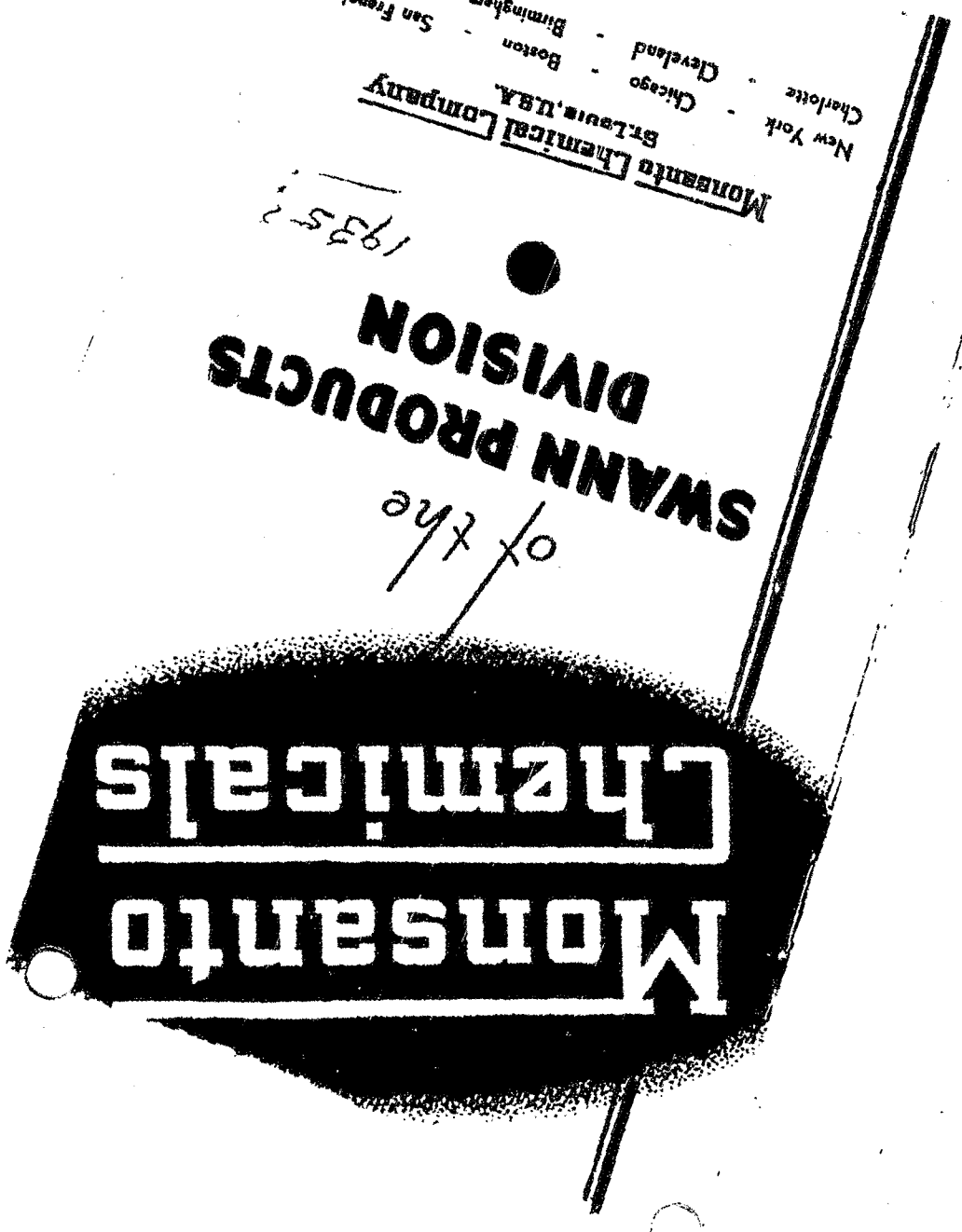


PLAINTIFF'S EXHIBIT
11-07-11

STLCOPCB0019605
HARTOLDMON0000444

[redacted]

FOR ready reference we list on the following pages the properties, containers and principal uses of the products marketed by our Swann Products Division. Additional information will be gladly furnished on request.

[redacted]

STLCOPCB0019606

HARTOLDMON0000445

Monsanto Chemical Company
St. Louis, U.S.A.

SWANN PRODUCTS DIVISION

Main Offices
1700 South Second Street
ST. LOUIS, MISSOURI

DISTRICT OFFICES

NEW YORK, N. Y. . . R. C. A. Bldg., Rockefeller Center
BOSTON, MASS. . . . . Everett Station
CHICAGO, ILL. . . . . Tribune Tower
AKRON, OHIO . . . . . 2nd National Building
CLEVELAND, OHIO . . . . . 414 Midland Building
BIRMINGHAM, ALA. . . . . Brown Marx Building
CHARLOTTE, N. C. . . . . 1014 Johnston Building
SAN FRANCISCO, CALIF. . . . . 373 Brannan Street
MONTREAL, CAN. . . . . 378 St. Paul St., West
LONDON, ENGLAND . . . . . Victoria Station House
MANCHESTER, ENGLAND . . . . .
SHANGHAI, CHINA . . . . . 119 Hong Kong & Shanghai Bank Building
SINGAPORE, S. S. . . . . 37 C Robinson Road

WORKS

ST. LOUIS, MO.
CARONDELET, MO.
MONSANTO, ILL.
EVERETT, MASS.
NITRO, W. VA.
NORFOLK, VA.
ANNISTON, ALA.
CAMDEN, N. J.
RUABON, N. WALES
SUNDERLAND, ENGLAND

SUBSIDIARIES

Merrimac Chemical Co.
Everett Station
Boston, Mass.

Rubber Service Laboratories Co., Inc.
1012 Second National Building
Akron, Ohio

Monsanto Chemicals, Ltd.
Victoria Station House
Victoria Street
London, S. W. 1, England

CABLE ADDRESS:
"Monsanto" St. Louis
A B C, 6th Edition
Acme, Bentley's and Bentley's Second

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HARTOLDMON0000446

Monsanto Chemicals
SWANN PRODUCTS DIVISION

PHOSPHORIC ACID

Chemical Formula: H_3PO_4

Properties:

A clear, water white liquid miscible with water in all proportions.

Strengths:

75% H_3PO_4.
50% H_3PO_4.
Other concentrations supplied on request.

Grades:

Food: Meets all U. S. Pure Food Law requirements.

Commercial: A clear water white liquid.

Special: Sulphate free, low iron, etc., grades, available on request.

Containers:

Rubber lined steel tank cars: 75%, 50,000 to 108,000 lbs. net; 50%, 40,000 to 91,000 lbs. net.

Compounded tight oak barrels: 75%, 700 average lbs. net; 50%, 545 average lbs. net.

Carboys—12 gal. capacity: 75%, 160 average lbs. net; 50%, 135 average lbs. net.

Principal Uses:

CERAMICS: In manufacture of porcelain, in making various ceramic products; to increase the translucency and improve the color of porcelains; as a vitrifying agent and flux.

CHEMICALS AND INTERMEDIATES: In manufacture of sodium phosphates, calcium phosphates, and other phosphates; in manufacture of ethylene gas; in making albumen derivatives. As a drying agent in the synthesis of various intermediate chemicals.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

PHOSPHORIC ACID

Continued

Principal Uses:

DYE: As a drying agent in the synthesis of various dyes.

ENGRAVING: In process engraving and litho trades.

ENVELOPE: As a penetrant to aid in the absorption of the gum.

FERTILIZER: In manufacture of double and triple super-phosphates; in manufacture of ammonium phosphate.

GELATIN: In manufacture of gelatin.

GLASS: As opacifier.

JELLY AND PRESERVE: As a substitute for tartaric and citric acids.

METAL: For pickling and cleaning metals.

PHARMACEUTICAL: In manufacture of certain pharmaceutical chemicals; in making dental cements; in manufacture and purification of hydrogen peroxide; in manufacture of glycero-phosphates.

ROPE AND TWINE: In brightening the finish of rope and twine.

RUBBER: As a coagulant of rubber latex.

RUST PROOFING: In the manufacture of rust proofing compounds.

SOFT DRINKS: As a substitute for tartaric and citric acid in soft drinks and mineral waters.

SUGAR: As a defecating and clarifying agent.

TEXTILE: In brightening the color of silk; in the dyeing of cotton; in calico printing.

WATER TREATMENT: In water softening and correction of alkalinity.

STLCOPCB0019608
HARTOLDMON0000447

Monsanto Chemicals
SWANN PRODUCTS DIVISION

PHOSPHORIC ACID PASTE

Properties:

A lime-phosphoric acid mixture containing not less than 50% P_2O_5.

Grades:

Wet Paste—A white, moist, stiff paste.

Dry Paste—A white granular product in the form of lumps.

Containers:

Wet Paste:

Barrels—Paraffin lined, 725 lbs. average net.

Kegs—Paraffin lined, 200 lbs. average net.

Dry Paste:

Barrels—425 pounds average net.

Kegs—160 pounds average net.

Principal Uses:

Sugar: For the defecation of raw sugar solutions.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

MONO AMMONIUM PHOSPHATE

Chemical Formula: $NH_4H_2PO_4$

Commercial Names:

Mono-ammonium phosphate; ammonium acid phosphate; primary ammonium phosphate; ammonium dihydrogen phosphate; ammonium phosphate mono-basic; ammonium bi-phosphate.

Properties:

A white crystalline material, stable in air and soluble in hot and cold water.
pH value of 1% solution is 4.4.

Grades:

Food Grade—Meets all U. S. Pure Food Law requirements.
Special grades will be supplied on request.

Containers:

Bags—200 lbs. net.
Barrels—350 lbs. net.
Kegs—150 lbs.

Principal Uses:

FIREPROOFING: As a fire retardant.
PAPER SPECIALTIES: As a fire retardant.
PHARMACEUTICAL: For special medicinal purposes.
TEXTILE: Production of woven belting.
YEAST PRODUCERS INCLUDING BREWERIES: As a food for the yeast plant.

STLCOPCB0019609
HARTOLDMON0000448

Monsanto Chemicals
SWANN PRODUCTS DIVISION

DI AMMONIUM PHOSPHATE

Chemical Formula: $(NH_4)_2HPO_4$

Commercial Names:

Di-ammonium phosphate; secondary ammonium phosphate; ammonium phosphate di-basic.

Properties:

White crystalline, stable in air and very soluble in water.
pH value of 1% solution is 7.7.

Grades:

Food—Meets all U. S. Pure Food Law requirements.
Special grades will be supplied on request.

Containers:

Bags—200 pounds net.
Barrels—325 pounds net.
Kegs—150 pounds net.

Principal Uses:

FIREPROOFING: As a fire retardant.
YEAST PRODUCERS INCLUDING BREWERIES: As a yeast food.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

MONO CALCIUM PHOSPHATE

Chemical Formula: $CaH_4P_2O_8H_2O$

Commercial Names:

Primary calcium phosphate; calcium dihydrogen phosphate; mono-basic calcium phosphate; calcium acid phosphate; acid phosphate of lime.

Properties:

A white stable material, soluble in water, giving an acid reaction.

Grades:

H T Regular—For phosphated and self rising flour; Baking Powder.
H T Granular—For Baking Powder. All grades meet U. S. Pure Food Law requirements.
Special grades will be supplied on request.

The following mixtures are carried in stock:

NEUT. STRENGTH	CONSTITUENTS
52	H. T. Regular, Starch and 15% Calcium Sulphate.
50	H. T. Regular and Starch.
50	H. T. Granular and Starch.
45	H. T. Regular, Starch and 18% Calcium Sulphate.
45	H. T. Regular, Starch and 30% calcium sulphate.
45	H. T. Regular and Starch.

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HARTOLDMON0000449

Monsanto Chemicals
SWANN PRODUCTS DIVISION

MONO CALCIUM PHOSPHATE
Continued

Containers:

REGULAR

Jute Bags—150 lbs. net and 175 lbs. net.

Sugar Barrels—300 lbs. net.

Flour Barrels—220 lbs. net.

Kegs—100 lbs. net.

GRANULAR

Jute Bags—175 lbs. net.

Barrels—375 lbs. net.

Kegs—100 lbs. net.

All containers carry waterproof paper liners.

Principal Uses:

BAKERIES: For leavening purposes and to prevent the formation of "rope" in bread.

BAKING POWDER: As sole acid agent or mixed with sodium aluminum sulfate or sodium acid pyro phosphate.

BISCUIT AND CRACKER: As a leavening agent.

FLOUR: In making self-rising, phosphated plain flour and prepared flours.

MALT: To control pH of solution.

PANCAKE: As an acid leavening agent.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

DI CALCIUM PHOSPHATE

Chemical Formula: $CaHPO_4$

Commercial Names:

Phosphate of lime; precipitated bone; secondary phosphate of lime.

Grades:

Medicinal Grade.

Food Grade.

Containers:

Barrels—350 pounds net.

Kegs—150 pounds net.

Principal Uses:

PHARMACEUTICAL: As a mineral supplement to the diet deficient in calcium and phosphorus.

DENTIFRICE: As tooth paste, etc.

STLCOPCB0019611
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Monsanto Chemicals
SWANN PRODUCTS DIVISION

TRI CALCIUM PHOSPHATE

Chemical Formula: $Ca_3P_2O_8$

Commercial Names:

Tri-basic calcium phosphate; normal calcium phosphate; neutral calcium phosphate; precipitated phosphate; tertiary calcium phosphate.

Properties:

A white amorphous powder, odorless and tasteless, practically insoluble in water.

Grades:

Dentifrice.
Conditioner (Salt, Sugar, etc.)
Medicinal.
All material conforms to requirements of U. S. Pure Food Laws.

Containers:

Dentifrice—Barrels, 150 lbs. net; bags, 85 lbs. net; kegs, 75 lbs. net.
Conditioner—Barrels, 120 lbs.; bags, 60 lbs.

Principal Uses:

CERAMICS: In manufacture of porcelains, potteries, and enamels.
DENTIFRICE: As a tooth paste base or polishing agent.
GLASS: As an ingredient in making milk glass.
PHARMACEUTICAL: For special medicinal purposes.
SALT: To prevent caking.
SUGAR: To prevent caking.
TEXTILES: As a mordant in dyeing textiles.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

MONO MAGNESIUM PHOSPHATE

Chemical Formula: $Mg\ H_4(PO_4)_2$

Commercial Names:

Magnesium phosphate, monobasic; acid magnesium phosphate; magnesium tetra hydrogen phosphate; magnesium biphosphate, monobasic.

Properties:

White crystalline material.

Grades:

Technical.

Containers:

Barrels—300 pounds net.
Kegs—100, 125, 150 pounds net.

Principal Uses:

PHARMACEUTICAL: Used as a laxative.

TRI MAGNESIUM PHOSPHATE

Chemical Formula: $Mg_3\ (PO_4)_2$

Commercial Name:

Neutral magnesium phosphate.

Properties:

A white crystalline powder.

Grades:

Technical.

Containers:

Kegs—100, 125, 150 pounds net.

Principal Uses:

PHARMACEUTICAL: As an antacid.

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HARTOLDMON0000451

Monsanto Chemicals
SWANN PRODUCTS DIVISION

MAGNESIUM AMMONIUM PHOSPHATE

Chemical Formula: $MgNH_4PO_4.6H_2O$

Commercial Name:

Magnesium ammonium ortho phosphate.

Properties:

A white powder insoluble in water and soluble in acids. Decomposes on heating.

Grades:

Technical.

Containers:

Barrels—200 pounds net.
Kegs—100, 125, 150 pounds net.

Principal Uses:

FIREPROOFING—Fire retardant for theatre scenery and curtains.

MONO POTASSIUM PHOSPHATE

Chemical Formula: KH_2PO_4

Commercial Names:

Potassium diphosphate; potassium biphosphate.

Properties:

Colorless crystals.

Grades:

Technical containing about 0.50% SO_3.
Sulphate free containing about 0.01% SO_3.

Containers:

Barrels—500 pounds net.
Kegs—100, 125, 150 pounds net.

Principal Uses:

BACTERIOLOGICAL: To control pH of culture media.

PHARMACEUTICAL: For special medicinal purposes.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

POTASSIUM AMMONIUM PHOSPHATE

Chemical Formula: $KNH_4H_4(PO_4)_2$

Commercial Names:

Potassium ammonium phosphate; ammonium potassium phosphate.

Properties:

Empirical formula corresponds very closely to $KNH_4H_4(PO_4)_2$. White crystalline material.

Grades:

Technical crystals.

Containers:

Barrels—400 pounds net.
Kegs—100, 125, 150 pounds net.

Principal Uses:

PHARMACEUTICAL: For special medicinal purposes.

SODIUM AMMONIUM PHOSPHATE

Chemical Formula: $NaNH_4HPO_4.4H_2O$

Commercial Names:

Microcosmic salt; sodium ammonium hydrogen phosphate; salt of phosphorous; phosphorous salt; fusible salt of urine.

Color and Properties:

Transparent, white, efflorescent, monoclinic crystals. Gives off water and ammonia on heating, leaving $NaPO_3$.

Grades:

Commercial—A granular product containing above 32% P_2O_5, 7.5% NH_3 and 14% Na_2O.

Containers:

Barrels—350 pounds net.
Kegs—100, 125, 150 pounds net.

Principal Uses:

ANALYTICAL LABORATORIES: Standardizing uranium solutions, determination of Mg and Mn, reagent in blow pipe analysis.

STLCOPCB0019613
HARTOLDMON0000452

Monsanto Chemicals
SWANN PRODUCTS DIVISION

SODIUM ACID PYRO PHOSPHATE

Chemical Formula: $Na_2H_2P_2O_7$

Commercial Names:

Disodium dihydrogen pyrophosphate; acid sodium pyrophosphate.

Properties:

A white powder, soluble in water and having a minimum neutralizing value of 73.

Grades:

Food and Commercial.

Food grade meets all U. S. Pure Food Law requirements.

Containers:

Bags, paper-lined—150 and 200 pounds net.

Barrels, paper-lined—450 pounds net.

Kegs, paper-lined—150 lbs. and 200 lbs. net.

Principal Uses:

BAKING POWDER: As a leavening agent.

ELECTROPLATING: Especially for tin plating.

FLOUR: As a leavening agent.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

SODIUM PYRO PHOSPHATE (TETRA)

Crystalline and Anhydrous

Chemical Formulae:
Crystalline—$Na_4P_2O_7.10H_2O$
Anhydrous—$Na_4P_2O_7$

Commercial Names:

Sodium pyrophosphate; pyrophosphate of soda; neutral pyrosodium phosphate.

Properties:

Crystalline—White crystalline material.
pH value of 1% solution is 9.8.
Anhydrous—White powder.
pH value of 1% solution is 9.8.

Grades:

Crystalline—containing above 32% P_2O_5.
Anhydrous—containing above 53% P_2O_5.

Containers:

Crystalline—Bags, 200 lbs. net; Barrels, 325 lbs. net; kegs, 125 lbs. net.
Anhydrous—Bags, 200 lbs. net; barrels, 275 lbs. net; kegs, 125 lbs. net.

Principal Uses:

BLEACHING: Especially for straw, and as an ink eradicator.
CHEMICAL: In manufacture of iron pyrophosphate, and other pyrophosphates.
DYE: Putting certain types of dye in complete solution.
ELECTROPLATING: Especially tin plating.
METAL CLEANING: For removing oil and grease.
METALLURGICAL: In electrolytic separation of various metals.
PHARMACEUTICAL: As a drug in pharmaceutical mixtures.
PROCESS CHEESE: As an emulsifier.
TEXTILE: For degumming silk, etc.

STLCOPCB0019614
HARTOLDMON0000453

Monsanto Chemicals
SWANN PRODUCTS DIVISION

MONO SODIUM PHOSPHATE

Monohydrate and Anhydrous

Chemical Formulae:
Monohydrate—$NaH_2PO_4.H_2O$
Anhydrous—NaH_2PO_4

Commercial Names:

Sodium phosphate, monobasic; sodium dihydrogen phosphate; sodium biphosphate; mono sodium ortho phosphate.

Properties:

Monohydrate: Contains not less than 52% P_2O_5.
pH value of 1% solution is 4.6.
Anhydrous: Contains not less than 58% P_2O_5.
pH value of 1% solution is 4.5.

Grades:

Food and Commercial.

Containers:

Bags—200 pounds net.
Barrels—400 pounds net.
Kegs—150 pounds net.

Principal Uses:

WATER TREATMENT: For conditioning boiler water.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

DI SODIUM PHOSPHATE

Crystalline and Anhydrous

Chemical Formulae:
Crystalline—$Na_2HPO_4.12H_2O$
Anhydrous—Na_2HPO_4

Commercial Names:

Phosphate of soda; sodium phosphate di-basic; secondary sodium phosphate.

Properties:

Anhydrous, containing not less than 49% P_2O_5.

pH value of 1% solution is 9.1.

Crystalline, containing not less than 19% P_2O_5.

pH value of 1% solution is 9.1.

One lb. of the anhydrous product is equal in Na_2HPO_4 content to 2.45 lbs. of the crystal product.

Grades:

Food. Commercial and U. S. P. Medicinal.

Food grade meets all U. S. Pure Food Law requirements.

STLCOPCB0019615
HARTOLDMON0000454

DI SODIUM PHOSPHATE

Continued

Containers:

Crystalline—Bags, 200 lb. net; barrels, 325 lb. net; kegs, 125 lb. net.

Anhydrous—Bags, 200 lb. net; barrels, 300 lb. net; kegs, 150 lb. net.

Principal Uses:

CERAMICS: In making glazes for potteries, porcelains and china ware.

CHEESE: In the making of process cheese, used as an emulsifier.

CHEMICAL: In various chemical processes.

DYE: In manufacture of dyestuff such as Schnitzler's green.

ENAMEL: For the preparation of enamels; in tinning and soldering.

LEATHER: In the tanning process.

METALLURGICAL: As an ingredient of the bath in galvanoplastic work.

PIGMENT: In the manufacture of pigments such as cobalt phosphate.

TEXTILE: In the weighting of silk; for impregnating textiles in dyeing and calico printing; as a fire-proofing agent.

WATER TREATMENT: For conditioning boiler water.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

TRI SODIUM PHOSPHATE

Crystalline

Chemical Formula: $Na_3PO_4.12H_2O$

Commercial Names:

Normal sodium phosphate; sodium phosphate, tri-basic; tertiary sodium phosphate; T. S. P.

Properties:

White crystalline material, uniformly sized, quickly soluble in water giving an alkaline reaction.

Grades:

	Nominal Size
Coarse	Thru 12 on 20 Mesh
Regular	Thru 12 on 50 Mesh
Medium	Thru 20 on 50 Mesh
Fines	Thru 40 on 100 Mesh
Powder	Thru 90 Mesh

Special sizes will be furnished on request.

Containers:

Bags—200 lbs. net.

Barrels—325 lbs. net.

Barrels (coarse only)—350 lbs. net.

Kegs—100, 125 and 150 lbs net.

Principal Uses:

CLEANERS AND DETERGENTS: Packaging for both household and industrial use.

FRUIT CLEANING: To remove insecticide sprays and inhibit growth of fruit mold.

WATER TREATMENT: For softening and conditioning water.

STLCOPCB0019616
HARTOLDMON0000455

Monsanto Chemicals
SWANN PRODUCTS DIVISION

GLOBO TRI SODIUM PHOSPHATE

Chemical Formula: $Na_3PO_412H_2O$

Properties:

A white spray congealed product; the material is in the form of small spheres, uniformly sized and quickly soluble in water.

Grades:

Commercial.

Containers:

Bags—200 lbs. net.

Barrels—325 lbs. net.

Kegs—100, 125 and 150 lbs. net.

Uses:

Same as for Crystalline T. S. P.
(Its distinctive appearance is an advantage for package goods trade.)

Monsanto Chemicals
SWANN PRODUCTS DIVISION

TRI SODIUM PHOSPHATE MONOHYDRATE

Chemical Formula: $Na_3PO_4 \cdot H_2O$

Properties:

White powder, soluble in water.

One pound is equivalent in Na_3PO_4 content to 2.08 pounds of trisodium phosphate crystalline.

Grades:

Commercial.

Containers:

Bags—200 pounds net.

Barrels—375 pounds net.

Kegs—150 pounds net.

Principal Uses:

Same as crystalline T. S. P.

In manufacture of compounds containing caustic soda it permits the production of dry mixtures.

STLCOPCB0019617
HARTOLDMON0000456

Monsanto Chemicals
SWANN PRODUCTS DIVISION

CALCIUM PYRO PHOSPHATE

Chemical Formula: $Ca_2P_2O_7$

Commercial Name:

Pyrophosphate of calcium.

Properties:

An amorphous white powder.

Grades:

Anhydrous—Containing above 54% P_2O_5.

Containers:

Barrels—325 lbs. net.

Principal Uses:

DENTIFRICES: As a polishing base.

METAL POLISHING COMPOUNDS: As mild abrasive for metal polishing.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

CALCIUM SULPHATE

Chemical Formula: $CaSO_4$

Properties:

A white, odorless, anhydrous product, practically insoluble in water, soluble in acids.

Grades:

Food and Brewing.

Special grades available on request.

Containers:

Barrels, 375 lbs. net.

Bags, 100 lbs. net.

Kegs, 175 lbs. net.

Principal Uses:

BREWING: In water treatment to improve flavor.

CEMENT: As a retarder; in making Keene's cement.

STLCOPCB0019618
HARTOLDMON0000457

Monsanto Chemicals
SWANN PRODUCTS DIVISION

CALCIUM SULPHATE
Continued

Principal Uses:

CHEMICAL: In the manufacture of ammonium sulphate, and sodium hyposulfite.

FERTILIZER: To furnish lime and sulphur for legume crops; for the absorption of ammonia.

PAINT AND VARNISH: As a filler; in making paints for interior decorating purposes; as a drier in oils; in the manufacture of terra alba and other mineral colors; in making cement paints.

PLASTICS: In making stucco, plaster and molded designs. In the manufacture of artificial ivory.

TEXTILE: In dyeing and calico printing.

CERAMICS: In the manufacture of porcelain.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

FERRO PHOSPHORUS
Iron Phosphide

Properties:

An alloy of iron and phosphorus.

Grades:

17% — 19%	Phosphorus
23% — 26%	Phosphorus

Containers:

Car lots shipped in open or closed cars in bulk.

Less car lots shipped in barrels or kegs.

Principal Uses:

FOUNDRIES: To increase fluidity of iron and steel castings.

STEEL: In sheet steel to prevent sticking of sheets in final rolling.

WIRE: In wire to give stiffness and better surface for drawing.

STLCOPCB0019619
HARTOLDMON000458

Monsanto Chemicals
SWANN PRODUCTS DIVISION

CRYSALBA

(Trade Mark Registered)

Properties:

An extremely fine, white powder composed of minute particles of crystalline shaped anhydrous calcium sulphate standardized and specially prepared for use as a dentifrice base (paste or powder). Can be used in preparing neutral, acid, basic, soap, or magnesia type dentifrice.

Containers:

Paper Bags, 90 lbs. net.

Barrels, 375 lbs. net.

Kegs, 175 lbs. net.

Principal Uses:

DENTIFRICE: As a tooth paste base or polishing agent.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

BONE ASH

Chemical Formula: $Ca_3(PO_4)_2$

Commercial Names:

Bone earth; bone phosphate.

Properties:

White powder.

Grades:

Moulding.
Cupel.
Glass and Porcelain.

Containers:

MOULDING
Barrels—450 lbs. net.
Kegs—200 lbs. net.

CUPEL
Barrels—400 lbs. net.
Drums—25, 50, 70, 100, 140 lbs. net.

Principal Uses:

ASSAYING: In making cupels.
COPPER REFINING: As a wash for wire bar molds.
GLASS: As an ingredient in the batch.
CERAMICS: As an ingredient.
PRECIOUS METALS: In making smelting cupels and in covering bottom of smelting furnaces.

STLCOPCB0019620
HARTOLDMON000459

Monsanto Chemicals
SWANN PRODUCTS DIVISION

FOS-FOR-MALT

(Trade Mark Registered)

Properties:

A mixture of chemicals, finely ground and acid in reaction. (Phosphates predominating.)

Grades:

Food Grade.

Containers:

Barrels, 300 lbs. net.

Barrels, 200 lbs. net.

Kegs, 112 lbs. net.

Principal Uses:

BREWING: To reduce the pH of the wort; to increase the solubility of the malted grain; to correct the P_2O_5 and ash content of malt syrup that are diluted with corn syrup or other malt adjuncts.

Fos-for-Malt accelerates the clarification, and improves the flavor of cereal beverages, made from malt syrup, and makes the sediment adhere firmly to the bottom of the bottles.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

BEAR BRAND LAMPBLACK

Properties:

Black amorphous fluffy powder. Can be furnished with blue or brown tones when used as a pigment. Practically pure carbon with small amounts of hydrocarbon and minor impurities.

Grades:

All standard grades and those for special purposes. Minimum to maximum tinctorial strength, varying from gray to blue gray. Top color opaque, intensity dependent on grade. Low oil absorption, easy grinding, proper dispersion characteristics, and freedom from grit, and empyreumatic matter.

Samples on request.

Containers:

Less Carload Shipments: Paper bags of 12½, 10 and 5 lbs. packed in corrugated cases. Also cardboard boxes of 1, ½ and ¼ lb.

Carload Shipments: 12½ and 10 lb. double paper bags and 100 lb. barrels.

Principal Uses:

ARTIFICIAL LEATHER: As a pigment.

BATTERIES, ELECTRIC STORAGE: As a material to increase the spongy properties of lead oxide.

STLCOPCB0019621
HARTOLDMON0000460

Monsanto Chemicals
SWANN PRODUCTS DIVISION

BEAR BRAND LAMPBLACK
Continued

Principal Uses:

CARBON PRODUCTS: As a carbon material (therapeutic carbons, etc.).

FERTILIZER: As a pigment.

FURNACES (HIGH TEMPERATURE): As an insulating material.

INK: As a pigment.

JAPANNING: As a pigment.

LINOLEUM: As a pigment.

METAL RECOVERY: For lining molds.

OILCLOTH: As a pigment.

PAINT AND GLASS STORES: In small packages as a pigment.

PAINT, VARNISH AND LACQUER: Pigment, particularly for tinting.

ROOFING: As a pigment in prepared roofing.

RUBBER BELTING: As a pigment.

RUBBER SPECIALTIES: As a pigment.

TREATED CLOTH, INCLUDING WINDOW SHADES: As a pigment.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

DIPHENYL

Chemical Formula: $C_6H_5.C_6H_6$

Commercial Names:

Biphenyl; phenyl benzene.

Properties:

Technical Diphenyl is a light yellow crystalline solid.

Boiling point 255.6° C.

Freezing point 68.5° C. to 68.9° C.

It is also the starting point for many derivatives such as Aroclors (chlorinated diphenyl) and the Sulfonic Acid, Nitro, Amino and Hydroxy compounds.

Containers:

Barrels—275 lbs. net.

Kegs—100 lbs. net.

Principal Uses:

Diphenyl is used as a high temperature, low pressure heat transfer medium.

Diphenyl Derivatives:

2 - Aminodiphenyl
4 - Aminodiphenyl
2 - Chlorodiphenyl
4 - Chlorodiphenyl
Diphenyl Monosulfonic Acid
2 - Nitrodiphenyl
4 - Nitrodiphenyl

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Monsanto Chemicals
SWANN PRODUCTS DIVISION

AROCLORS

(Trade Mark Registered)

The Aroclors vary from water-white mobile liquids and pale yellow viscous oils to light amber resins and opaque crystalline solids.

Non-Flammability:

The viscous Aroclor oils and the resins do not support combustion when heated alone even at their boiling points—temperatures above 360° C. Most of the Aroclors flux readily with resinous and pitch-like materials to give a product having a decreased fire hazard.

Electrical Properties:

The Aroclors have excellent electrical characteristics; high dielectric constant and resistivity, low power factor.

Solubility:

The Aroclor oils and resins are easily soluble in most of the common organic solvents and drying oils. The hard crystalline materials are in general less soluble than the oils or resins. All Aroclors are insoluble in water.

Adhesiveness:

The more viscous Aroclors and Aroclor resins have excellent adhesive properties.

Thermoplasticity:

The Aroclors are thermoplastic, and apparently undergo no further condensation or hardening upon repeated melting and cooling.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

AROCLORS

Continued

Non-Drying Properties:

The Aroclors are non-drying, and when they are exposed to the air no noticeable oxidation or hardening takes place.

Vaporization Loss:

The clear resins have rather low vaporization losses. At 65.8° C. (150° F.) these losses are less than 0.04 g. per square inch of surface per month.

Odor and Taste:

The Aroclor viscous oils and resins are almost without odor and taste at ordinary temperatures.

Refractive Indices:

The refractive indices of these materials are above 1.6125.

Stability:

The Aroclors in general are stable on long heating at 150° C. and are not affected by boiling with sodium hydroxide solution. The light oils can be distilled at atmospheric pressure without appreciable decomposition and the viscous oils and resins distill readily under vacuum.

Corrosiveness:

The Aroclors have practically no corrosive action when applied to metallic surfaces.

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SOME TYPICAL USES OF AROCLOR

Continued

In Lacquer, Paint and Varnish:

Aroclors are used because of their qualities of moisture and gas proofness—their resistance to acids, alkalies, and ultra violet light—their electrical insulation and durability.

Sealing Waxes:

Where a moisture proof, non-inflammable wax or one with good electrical insulating properties is desired.

Adhesives:

Aroclors in adhesive application have the desirable qualities of being non-crystalline, insoluble in water, thermoplastic, light in color, practically odorless, non-drying, soluble in most organic solvents, and have excellent adhesion even to lacquered or varnished surfaces.

Impregnation:

Aroclor is used in impregnation of materials and articles to give them moistureproofness, electrical insulation, flameproofness, and resistance to alkalies and acids.

Corresponding to each clear Aroclor there is also a black Aroclor of similar properties other than color.

Flameproofing

Aroclor is used in combination with many other materials to reduce the inflammability of those materials.

Containers:

Steel Drums—350 pounds, 500 pounds, net weight depending upon the particular Aroclor.

Monsanto Chemicals
SWANN PRODUCTS DIVISION

ALUMINUM OXIDE ABRASIVE GRAIN

Commercial Names:

Fused aluminum oxide; artificial corundum.

Properties:

Fused aluminum oxide containing 95-99% Al_2O_3. Hardness 9.6. Moh's Scale.

Grades:

For Grinding Wheels:

Regular Aluminous Abrasives.

Specially Prepared Aluminous Abrasives (Used principally for precision grinding).

For Polishing:

Regular Polishing Aluminous Abrasives.

For Paper and Cloth:

Paper and Cloth Aluminous Abrasives.

For Refractory Purposes:

Refractory Aluminum Oxide.

For Anti-Slip or Tread:

Aluminum Oxide.

These grades are furnished in all commercial sizes from coarse to flours.

Containers:

Kegs—random weights—Approx. 350 pounds net.

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Monsanto Chemicals
SWANN PRODUCTS DIVISION

ALUMINUM OXIDE ABRASIVE GRAIN
Continued

Uses By Industries:

ANTI-SLIP OR TREAD GRADE:

Anti-Slip Tread Manufacturers.
Anti-Slip Surfaces.
Artificial Stone (Precast) Manufacturers.

GRINDING WHEEL GRADE:

Grinding Wheel Manufacturers.

PAPER AND CLOTH GRADE:

Coated Paper and Cloth (Sand paper).

POLISHING GRADE:

Agricultural Implement Manufacturers.
Axle, Tool and Shovel Manufacturers.
Ball Bearing Manufacturers.
Cut Stone Manufacturers (Smoothing, Air Blasting and Gang Sawing)
Golf Club Manufacturers.
Grease Stick Manufacturers.
Metal Finishing (Polishing).
Optical Lens Manufacturers.
Plate Glass and Mirror Manufacturers (Edging, Beveling and Polishing).
Steel Mills (Stainless Steel Polishing).

REFRACTORY GRADE:

Refractories, Super (Heat-Resistant Products).

Monsanto Chemicals
SWANN PRODUCTS DIVISION

SILICON CARBIDE ABRASIVE GRAIN

Properties:

Greenish, black crystals containing 90-98% SiC. Hardness 9-10, Moh's Scale.

Grades:

Anti-Slip Tread.
Grinding Wheel.
Paper and Cloth.
Polishing.
Refractory Materials.

Containers:

Kegs—Random weights, approximately 300 lbs. net.

Uses By Industries:

ANTI-SLIP TREAD GRADE:

Anti-Slip Tread Manufacturers.

GRINDING WHEEL GRADE:

Grinding Wheel Manufacturers.

PAPER AND CLOTH GRADE:

Coated Abrasive Paper and Cloth Manufacturers.

POLISHING GRADE:

Glass and Mirror Manufacturers.
Metal Polishing.
Optical Manufacturers.
Stone Working Trade.

REFRACTORY GRADE:

High Temperature Cement Manufacturers.
Super-Refractory Manufacturers.

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Monsanto Chemicals
SWANN PRODUCTS DIVISION

OTHER PRODUCTS SOLD BY SWANN PRODUCTS DIVISION

We also supply the following chemicals manufactured to our specifications and carrying the same guarantee of high quality as the chemicals of our own manufacture.

Data on these items are available and will be sent on request.

- Bone Black
- Carbon Black
- Carbonic Soda
- Caustic Soda
- Soda Ash
- Sodium Aluminum Sulphate (S. A. S.)
- Sodium Bicarbonate
- Sodium Meta Silicate

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