



## Aalseal 521

**1 PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier:** Aalseal 521  
**Common Name:** Aluminum Filled Phosphate/Chromate solution  
**SDS Number:** A9  
**Revision Date:** 5/6/2015  
**Version:** 1  
**Chemical Family:** Acid  
**Supplier Details:** Coatings for Industry, Inc.  
319 Township Line Road  
Souderton, PA 18964

**Contact:** USA: 1-800-535-5053 / International :352-323-3500  
**Phone:** 215-723-0919  
**Fax:** 215-723-0911  
**Email:** cs@cficoatings.com  
**Web:** www.cficoatings.com

**2 HAZARDS IDENTIFICATION****Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Health, Serious Eye Damage/Eye Irritation, 1  
Health, Specific target organ toxicity - Repeated exposure, 1  
Health, Carcinogenicity, 1 A  
Health, Germ cell mutagenicity, 1 B  
Health, Respiratory or skin sensitization, 1 Respiratory  
Environmental, Hazards to the aquatic environment - Acute, 1  
Environmental, Hazards to the aquatic environment - Chronic, 1  
Health, Respiratory or skin sensitization, 1 Skin  
Health, Reproductive toxicity, 2  
Health, Acute toxicity, 4 Oral  
Health, Acute toxicity, 5 Dermal  
Health, Acute toxicity, 5 Inhalation

**GHS Label elements, including precautionary statements**

**GHS Signal Word:** **DANGER**

**GHS Hazard Pictograms:**

**GHS Hazard Statements:**

H318 - Causes serious eye damage  
H372 - Causes damage to organs through prolonged or repeated exposure  
H350 - May cause cancer  
H340 - May cause genetic defects  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H317 - May cause an allergic skin reaction  
H361 - Suspected of damaging fertility or the unborn child  
H302 - Harmful if swallowed  
H313 - May be harmful in contact with skin



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H333 - May be harmful if inhaled

**GHS Precautionary Statements:**

- P201 - Obtain special instructions before use.  
 P220 - Keep/Store away from clothing/combustible materials.  
 P234 - Keep only in original container.  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray.  
 P264 - Wash hands thoroughly after handling.  
 P273 - Avoid release to the environment.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P284 - Wear respiratory protection.  
 P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 P303+361+353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
 P310 - Immediately call a POISON CENTER or doctor/physician.  
 P363 - Discard contaminated clothing or wash before reuse.  
 P390 - Absorb spillage to prevent material damage.  
 P501 - Dispose of contents/container to licensed hazardous waste disposal service.

<b>3</b>	<b>COMPOSITION/INFORMATION OF INGREDIENTS</b>
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**Ingredients:**

Cas#	%	Chemical Name
7732-18-5	37-46%	Water
92203-02-6	14-18%	Phosphoric acid, reaction products with aluminum hydroxide and chromium oxide (CrO3)
7429-90-5	40-45%	Aluminum powder, uncoated

\*2.9-3.5% of total weight is CrO3.....PEL-.005 mg/m3 ceiling for CrO<sub>3</sub>  
 ACGIH-as soluble Cr (VI) compound  
 0.05 mg/m3  
 NIOSH - as Cr (VI) compound  
 0.001 mg/m3 10 hour TWA

<b>4</b>	<b>FIRST AID MEASURES</b>
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- Inhalation:** If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention. Give oxygen or artificial respiration if needed. Get immediate medical attention.
- Skin Contact:** Remove contaminated clothing and footwear and wash before reuse. Discard clothing and footwear which cannot be decontaminated.  
 Wash with soap and water for at least 15 minutes. Get medical attention if needed or irritation develops.
- Eye Contact:** Immediately flush eyes with large amounts of water for at least 15 minutes, lifting eyelids occasionally to facilitate irrigation.  
 Washing eyes within one minute is essential to achieve maximum effectiveness.  
 Get immediate medical attention.
- Ingestion:** Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Drink large quantities of water. If available, give several glasses of milk. Follow with milk of magnesia. If vomiting occurs spontaneously, keep airway clear and give more water. Seek immediate medical attention.



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**5 FIRE FIGHTING MEASURES**

**Flammability:** Non-Flammable  
**Flash Point:** N/A  
**LEL:** N/A  
**UEL:** N/A

**Extinguishing Media**  
Use Sand or Carbon Dioxide (CO<sub>2</sub>)

**Extinguishing Media:**

Use Sand or Carbon Dioxide (CO<sub>2</sub>)

**Special Fire Fighting Procedures:**

Wear protective clothing and NIOSH/OSHA approved positive pressure self contained breathing apparatus in fire conditions. Do not use extinguishing agents containing water as a reaction with aluminum may produce hydrogen gas.

**Unusual Fire or Explosion Hazards:**

Contact with alkalis, strong reducing or oxidizing agents may produce hydrogen gas causing fire or explosion hazard. Caution: Toxic phosphide may be given off in fire or other very high temperature conditions.

**6 ACCIDENTAL RELEASE MEASURES**

Evacuate nonessential personnel. Avoid contact with eyes.

Do not discharge into drains.

Use sawdust, vermiculite, Fuller's Earth or other absorbent material to soak up spill then neutralize with sodium bicarbonate. Then flush area with water. Do not use strong alkalis.

**Waste Disposal Method:**

Filter to remove solids and discard as solid chemical waste. Treat remaining liquid with sodium metabisulfate, then precipitate trivalent chromium by neutralizing with alkali, such as lime. Waste must be disposed of in accordance with federal, state, and local environmental control regulations.

**7 HANDLING AND STORAGE**

**Handling Precautions:** Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Launder contaminated clothing. Wash clothing before reuse and decontaminate or discard contaminated shoes. Wash thoroughly after handling.

Employee education and training in the safe use and handling of this product is required under the OSHA Hazard Communication Standard.

**Storage Requirements:** Store in area where it will not come into contact with strong alkalis or oxidizing agents. Protect from freezing.

**8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls:** All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).

**Personal Protective Equipment:** Personal protective equipment

Eye/face protection: Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye



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protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi- purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure: Do not let product enter drains.

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested: Dermatril (KCL 740 / Aldrich Z677272, Size M) Splash contact data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Skin and body protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Components with workplace control parameters

#### Aluminum powder, uncoated (7429-90-5)

7429-90-5 TWA 1 mg/m<sup>3</sup> USA. ACGIH Threshold Limit Values (TLV)  
Lower Respiratory Tract irritation Pneumoconiosis Neurotoxicity Not classifiable as a human carcinogen

TWA 15 mg/m<sup>3</sup> USA. Occupational Exposure Limits (OSHA) - Table Z- 1 Limits for Air Contaminants  
TWA 5 mg/m<sup>3</sup> USA. Occupational Exposure Limits (OSHA) - Table Z- 1 Limits for Air Contaminants

TWA 15 mg/m<sup>3</sup> USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000  
TWA 5 mg/m<sup>3</sup> USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000  
TWA 5 mg/m<sup>3</sup> USA. NIOSH Recommended Exposure Limits  
TWA 10 mg/m<sup>3</sup> USA. NIOSH Recommended Exposure Limits

#### Phosphoric acid (7664-38-2)

TWA 1 mg/m<sup>3</sup> USA. ACGIH Threshold Limit Values (TLV)  
STEL 3 ppm USA. ACGIH Threshold Limit Values (TLV)

#### Eye, skin, & Upper Respiratory Tract irritation

TWA 1 mg/m<sup>3</sup> USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants  
TWA 1 mg/m<sup>3</sup> USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000  
STEL 3 mg/m<sup>3</sup> USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

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TWA 1 mg/m<sup>3</sup> USA. NIOSH Recommended Exposure Limits  
ST 3 mg/m<sup>3</sup> USA. NIOSH Recommended Exposure Limits

**Chromium oxide (CrO<sub>3</sub>) (1333-82-0)**

TWA 0.001 mg/m<sup>3</sup> USA. NIOSH Recommended Exposure Limits

Potential Occupational Carcinogen See Appendix C See Appendix A  
See Table Z-2 for the exposure limit for any operations or sectors where the exposure limit in 1910.1026 is stayed or is otherwise not in effect Substance listed; for more information see OSHA document 1910.1026

See 1910.1026. See Table Z-2 for the exposure limit for any operations or sectors where the exposure limit in 1910.1026 is stayed or are otherwise not in effect.

**Aluminum hydroxide (Al(OH)<sub>3</sub>) (21645-51-2)** : no data available

**9 PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Opaque green-gray	<b>Odor:</b>	No odor
<b>Physical State:</b>	Liquid	<b>Solubility:</b>	Soluble
<b>Spec Grav./Density:</b>	1.65 +/- 0.05	<b>Percent Volatile:</b>	67.5 +/- 2.5% (by volume)
<b>Viscosity:</b>	15-20 (#2 Zahn Cup)	<b>Freezing/Melting Pt.:</b>	32 F
<b>Boiling Point:</b>	212 F	<b>Flash Point:</b>	N/A
<b>Flammability:</b>	Non-Flammable	<b>VOC:</b>	0%
<b>pH:</b>	1.25 +/- .25		

**10 STABILITY AND REACTIVITY**

**Stability:** Product is stable under normal conditions  
**Materials to Avoid:** Alkalies, Strong Oxidizing Agents, Strong Reducing agents.  
**Hazardous Decomposition:** Not known.  
**Hazardous Polymerization:** Will not occur.

**11 TOXICOLOGICAL INFORMATION**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Aluminum powder, uncoated (7429-90-5)**

Information on toxicological effects

Acute toxicity:  
Oral LD50 LD50 Oral - rat - > 2,000 mg/kg  
Inhalation LC50 LC50 Inhalation - rat - 4 h - > 888 mg/l  
Dermal LD50 no data available  
Other information on acute toxicity

Skin corrosion/irritation: no data available  
Serious eye damage/eye irritation: no data available  
Respiratory or skin sensitisation: no data available  
Germ cell mutagenicity: no data available



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**Carcinogenicity:**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System): no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: Cough, weight loss, anemia, Weakness, Incoordination.

Synergistic effects: no data available

Additional Information:

RTECS: BD0330000

**Phosphoric acid (7664-38-2)**

Information on toxicological effects

**Acute toxicity:**

Ingestion/Oral Rat LD50 1530mg/kg

Inhalation: no data available

Dermal: Skin-Rabbit LD50 2740mg/kg

**Irritation:**

Eye-Rabbit 119mg/kg Severe irritaion, irreversible burns (corrosive)

Skin-Rabbit 595mg/kg 24 hours Severe irritaion, irreversible burns (corrosive)

Note: Information above for Phosphoric Acid

**Carcinogenicity:**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Additional Information:

RTECS: Not available

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation



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and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence (Phosphoric acid)

**Chromium oxide (CrO3) (1333-82-0)**

Information on toxicological effects

Acute toxicity:

Oral LD50 LD50 Oral - rat - male and female - 52 mg/kg

Inhalation LC50 LC50 Inhalation - rat - male - 4 h - 217 mg/m3

Dermal LD50 LD50 Dermal - rabbit - male and female - 57 mg/kg

Other information on acute toxicity no data available

Skin corrosion/irritation: Skin - rabbit - Corrosive - 24 h

Serious eye damage/eye irritation: Eyes - rabbit - Corrosive to eyes

Respiratory or skin sensitisation: no data available

Germ cell mutagenicity: May alter genetic material. In vivo tests showed mutagenic effects

Carcinogenicity:

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Human carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (Chromium trioxide)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: Known to be human carcinogen (Chromium trioxide)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: May cause reproductive disorders.

Teratogenicity: Suspected human reproductive toxicant

Specific target organ toxicity - single exposure (Globally Harmonized System):  
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):  
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion Toxic if swallowed. Skin Toxic if absorbed through skin. Causes skin burns. Eyes Causes eye burns. Causes severe eye burns.

Signs and Symptoms of Exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Synergistic effects: no data available

Additional Information:

RTECS: GB6650000

**Aluminum hydroxide (Al(OH)3) (21645-51-2)**



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## Information on toxicological effects

Acute toxicity:  
no data available

## Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.  
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.  
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.  
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):  
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):  
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: Nausea, Vomiting, Constipation.

Synergistic effects: no data available

Additional Information:  
RTECS: BD0940000

**12****ECOLOGICAL INFORMATION****Aluminum powder, uncoated (7429-90-5)**

## Information on ecological effects

Toxicity: LC50 0.16mg/l, 96hrs. (Rainbow trout, donaldson trout)  
Persistence and degradability: not biodegradeable  
Bioaccumulative potential: no data available  
Mobility in soil: no data available  
PBT and vPvB assessment: no data available

Other adverse effects: no data available

**Phosphoric acid (7664-38-2)**





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## Information on ecological effects

Toxicity: Mosquitofish LC50 138mg/L 96 hours  
Persistence and degradability: no data available  
Bioaccumulative potential: no data available  
Mobility in soil: no data available  
Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: no data available

**Chromium oxide (CrO<sub>3</sub>) (1333-82-0)**

## Information on ecological effects

Toxicity:  
Toxicity to fish LC50 - Tilapia mossambica - 21.05 - 141.38 mg/l - 96.0 h.  
LC0 - Leuciscus idus (Golden orfe) - 100 mg/l - 48.0 h  
Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 0.8 mg/l - 48 h.  
and other aquatic invertebrates  
Persistence and degradability: no data available  
Bioaccumulative potential: no data available  
Mobility in soil: no data available  
PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

**13****DISPOSAL CONSIDERATIONS**

Waste disposal method: Filter to remove aluminum and discard as solid chemical waste. Treat remaining liquid with sodium metabisulfate, then precipitate trivalent chromium by neutralizing with alkali, such as lime.  
Waste must be disposed of in accordance with federal, state, and local environmental control regulations.

**14****TRANSPORT INFORMATION**

Non-hazardous for air, sea and road freight.



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**REGULATORY INFORMATION**

Component (CAS#) [%] - CODES

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Water (7732-18-5) [37-46%] TSCAPhosphoric acid, reaction products with aluminum hydroxide and chromium oxide (CrO<sub>3</sub>) (92203-02-6) [14-18%] TSCA

Aluminum powder, uncoated (7429-90-5) [40-45%] EPCRAWPC, MASS, NJHS, OSHAWAC, PA, SARA313, TSCA, TXAIR

Chromium oxide (CrO<sub>3</sub>) (1333-82-0) [2.9-3.5%] MASS, PA, PROP65, SARA313, TSCA

Regulatory CODE Descriptions

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TSCA = Toxic Substances Control Act  
EPCRAWPC = EPCRA Water Priority Chemicals  
MASS = MA Massachusetts Hazardous Substances List  
NJHS = NJ Right-to-Know Hazardous Substances  
OSHAWAC = OSHA Workplace Air Contaminants  
PA = PA Right-To-Know List of Hazardous Substances  
SARA313 = SARA 313 Title III Toxic Chemicals  
TXAIR = TX Air Contaminants with Health Effects Screening Level  
PROP65 = CA Prop 65

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**OTHER INFORMATION**

**NOTICE:** This information is presented in good faith and believed to be accurate as of the effective date below. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Coatings For Industry, Inc. assumes no responsibility for personal injury or property damage to vendees, users, or third parties caused by the material. Such vendees or users assume all risks associated with the use of the material. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The preceding specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.