

Ransom & Randolph

1. Product and Company Name

<i>Product Name</i> Platinum Investment Binder, Platinum Plus™ Binder	<i>MSDS Code Number</i> 098
<i>Trade Name & Synonyms</i>	<i>Date of Last Revision</i> July 2007
<i>Chemical Name</i> Acid mixture	<i>Manufacturer</i> Ransom & Randolph
<i>C.A.S. Number</i>	<i>Address</i> 3535 Briarfield Blvd, Maumee, OH 43537
<i>Grades or Minor Variant Identities</i>	<i>Information Telephone Number</i> (419) 865-9497 FAX (419) 865-9997
<i>Product Use</i> Investment casting	<i>Emergency Telephone Number</i> Chemtrec: 800-424-9300 International Chemtrec: 703-527-3887 Canada Chemtrec: 613-996-6666

2. Composition

<u>Hazardous Components</u>	<u>C.A.S. Number</u>	<u>%</u>
Orthophosphoric acid	7664-38-2	More than 50
Hydrochloric acid	7647-01-0	Less than 10

3. Hazardous Identification*Emergency Overview*

This is a corrosive product. This product can cause severe burns and can cause permanent eye injury. Harmful if swallowed.

<i>Routes of Exposure</i>	<i>Signs & Symptoms</i>	<i>Single, Repeated, or Lifetime Exposure</i>	<i>Severity (Mild, Moderate, Severe)</i>	<i>Acute and Chronic Health Effect(s)</i>	<i>Target Organ(s)</i>
<i>Eye</i>	Severe burning.				
<i>Skin</i>	Severe burning.				
<i>Inhalation</i>	Coughing, burning, tightness of chest and/or shortness of breath				Lungs, nose, upper respiratory tract
<i>Ingestion</i>	Possible nausea and/or burning.				Mouth, throat, digestive tract
<i>Other</i>					

Medical Conditions Aggravated by Exposure

Possibly skin diseases or respiratory diseases.

Carcinogenicity (IARC, NTP)

Not listed.

Potential Environmental Effects

4. First Aid Measures

<i>Routes of Exposure</i>	<i>First Aid Instructions</i>	<i>Immediate Medical Attention</i>	<i>Delayed Effects</i>
<i>Eye</i>	Immediately flush eyes with plenty of water for two to three minutes. Remove any contact lenses and continue flushing for 15 minutes. Get immediate medical attention.		
<i>Skin</i>	Remove contaminated clothing including shoes and immediately wash affected area with plenty of soap and water. Seek immediate medical attention. Wash contaminated clothing and shoes before reuse.		
<i>Inhalation</i>	Wash out mouth with water, keep at rest. Seek immediate medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.		
<i>Ingestion</i>	Remove from further exposure. Keep warm and at rest. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should administer oxygen. Seek immediate medical attention.		
<i>Other</i>			

Note to Physicians (Treatment, Testing, and Monitoring)

Treat asphyxia from glottal edema by maintaining an adequate airway. Treat shock – Maintain normal blood pressure by transfusion and by the administration of 5% dextrose in saline. Circulatory shock is often the immediate cause of death. If symptoms are severe and perforation of the stomach or esophagus is suspected, give nothing by mouth until endoscopic examination has been done.

Maintain nutrition by giving carbohydrate or hyperalimentary fluid intravenously. Give prednisolone, 2 mg/kg/d in divided doses for ten days, to reduce the possibility of progressive lung damage.

Esophageal stricture may require dilation.

5. Fire-fighting Measures

<i>Flashpoint: (Method)</i> N/A	<i>Flammable (Explosive) Limits in Air</i>		<i>Autoignition Temperature:</i>	<i>Other</i>
	<i>LEL: N/A</i>	<i>UEL: N/A</i>		
<i>Flame Propagation or Burning Rate (for solids):</i>	<i>Properties Contributing to Fire Intensity</i>	<i>Flammability Classification NFPA Rating:</i>		
<i>Extinguishing Media</i> Water spray, carbon dioxide, foam, dry chemical		<i>Extinguishing Media to Avoid</i>		

Protection and Procedures for Firefighters:

Procedures: This product is a nonflammable substance. However, hazardous decomposition and combustion products may be formed in a fire situation. Cool exposed containers with water spray to prevent overheating.

Equipment: Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (Bunker Gear) and self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of a SCBA may not be required.

Unusual Fire and Explosion Hazards:
Reacts with metals to product hydrogen.

6. Accidental Release Measures

Containment Techniques

Small Spill: Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material.

Wearing the appropriate personal protective equipment designated in Section 8, move the leaking container to a containment area or rotate the container so that the opening is above the liquid level.

Neutralize with lime or other base, then absorb on diatomaceous earth or equivalent inert material. Shovel up and dispose of at an appropriate waste disposal facility according to current applicable laws and regulations, and product characteristics at time of disposal.

Spill/Leak Clean-Up Procedures and Equipment

Large Spill: Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material.

Wearing the appropriate personal protective equipment designated in Section 8, close or cap valves and/or block or plug hole in leaking container and transfer to another container.

Contain material as described above and call the local fire or police department for immediate emergency assistance.

Evacuation Procedures

Water Spill: Use appropriate containment to avoid runoff or release to sewer or waterways.

Land Spill: Use appropriate containment to avoid runoff or release to ground.
Remove containers of strong bases from release area.

Special Instructions

If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER toll free number 800-424-8802.

Reporting Requirements

7. Handling and Storage

Handling Practices and Warnings

Use appropriate personal protective equipment. Handle in a well-ventilated area. Handle and use in a manner consistent with good industrial/manufacturing techniques and practices.

Storage Practices and Warnings

Store in unopened containers under cool and dry conditions. Do not store with, or close to, strong bases.

8. Exposure Controls/Personal Protection

<i>Ventilation</i>	<i>Other Engineering Controls</i> Use adequate general or local exhaust to keep airborne concentrations below the permissible exposure limits.	
<i>Routes of Entry:</i>	<i>Personal Protective Equipment (PPE) for Normal Use:</i>	<i>PPE for Emergencies:</i>
<i>Eye/Face</i>	Wear chemical splash goggles and face shield when eye and face contact is possible due to splashing or spraying of material.	Eye wash and shower
<i>Skin</i>	Neoprene or polyvinyl chloride gloves.	Eye wash and shower
<i>Inhalation</i>	A respirator protection program that meets OSHA's 29 CFR §1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.	

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

EXPOSURE LIMITS

	OSHA PEL		ACGIH TLV		Supplier OEL	
	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Phosphoric Acid	TWA	NL ⁽¹⁾ 1	NL	1	NL	NL
	STEL	NL 3	NL	3	NL	NL

<u>Chemical Name</u>	<u>ACGIH</u>	<u>NIOSH</u>	<u>OSHA – Final PELs</u>
Water	none listed	none listed	none listed
Hydrochloric acid	C 5 ppm	50 ppm IDLH	C 5 ppm; C 7 mg/m ³

General Hygiene Considerations and Work Practices

Other Protective Measures and Equipment

9. Physical and Chemical Properties

<i>Appearance</i> Clear, colorless liquid		<i>Odor</i> Slight pungent odor	
<i>Normal Physical State:</i>		<i>Boiling Point</i>	>250°F
<i>Liquid</i> X <i>Gas</i>		<i>Melting Point</i>	@ 0°F
<i>Solid</i>		<i>Freezing Point</i>	@ 0°F
<i>Specific Gravity or Density (H₂O=1)</i> @ 1.5	<i>Solubility in Water</i> Dilutable		<i>pH</i> 2 - 3
<i>Vapor Pressure (mm Hg.)</i> N/A	<i>Vapor Density (AIR = 1)</i> N/A		<i>Evaporation Rate (Butyl Acetate=1)</i> N/A
<i>Other</i> % Volatile by Volume: 3			

10. Stability and Reactivity

<i>Incompatibility (Materials to Avoid)</i> Strong bases metals.

<i>Hazardous Products Produced During Decomposition</i> Reacts with metals to produce hydrogen, hydrogen chloride, chlorine, phosphine oxides of phosphorus, COx.			
<i>Hazardous Polymerization?</i>	<i>May Occur</i>	<i>May Not Occur</i>	<i>Conditions to Avoid</i>
<i>Stability?</i>	<i>Stable</i> Y	<i>Unstable</i>	<i>Conditions to Avoid</i>
11. Toxicological Information			
<i>Toxicity Data, Epidemiology Studies, Carcinogenicity, Neurological Effects, Genetic Effects, Reproductive Effects, or Structure Activity Data</i>			
12. Ecological Information			
<i>Toxicity, Environmental Fate, Physical/Chemical Data, or Other Data Supporting Environmental Hazard Statements</i>			
Environmental Fate: Inorganic phosphates in contact with the soil, sub-surface, or surface waters may be taken up by plants and utilized as essential nutrients. Phosphates may also form precipitates, usually with calcium or magnesium. The resultant compounds are insoluble in water and become a part of the soil or sediment. The term biodegradability, as such, is not applicable to inorganic compounds.			
Environmental Effects: Aquatic toxicity data (for sodium phosphates) 96 hr LC50 100 mg/l, non-toxic (rainbow trout, inland silversides and mysid shrimp) 48 hr EC50 100 mg/l, non-toxic (daphnia magna).			
13. Disposal Considerations			
<i>Regulations</i>			
Disposal Method: Dispose of waste at an appropriate waste disposal facility according to current applicable laws and regulations.			
For Large Spills: Contain material and call local authorities for emergency assistance. In consultation with the appropriate authorities, determine the disposal method.			
Product Disposal: Neutralize with lime or other base. Collect in appropriate containers. Dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.			
Empty Container: Triple rinse with a suitable solvent and offer for recycle.			
Properties (Physical/Chemical) Affecting Disposal			
14. Transport Information			
<i>Regulated for shipping?</i> Yes X No	<i>Proper Shipping Name</i> Corrosive liquid, acidic, inorganic, n.o.s., 8, (orthophosphoric acid, hydrochloric acid)	<i>Packing Group</i> II	
<i>Do changes in quality, packaging, or shipment method change product classification?</i> Yes X No	<i>Hazard Class</i>	<i>Identification Number</i> UN Number 3264	
<i>Other</i> UN packaging requirements HG/Y1.75YY Labels require corrosive.			

15. Regulator Information

REGULATORY INFORMATION

UNITED STATES
DOT LABEL SYMBOL AND HAZARD CLASSIFICATION
DOT CORROSIVE

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

Fire: No Pressure Generating: No Reactivity: No Acute: Yes Chronic: No

313 REPORTABLE INGREDIENTS: CAS #: 7664-38-2
Phosphoric acid

Chemical:

CAS # 7647-01-0
Chemical: Hydrogen Chloride

TITLE III NOTES: Not Applicable

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA RQ:
CAS #: 7664-38-2
Chemical: Phosphoric Acid
CERCLA RQ: 5000 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: All intentional ingredients are listed on the TSCA Inventory.
NATIONAL RESPONSE CENTER: U.S. Coast Guard National Center telephone # 1-800-424-8802

CANADA

WHMIS HAZARD SYMBOL AND CLASSIFICATION
Corrosive Class E
WHMIS Corrosive

WHMIS (WORKER HAZARDOUS MATERIALS INFORMATION SYSTEM): This product is WHMIS controlled. WHMIS exempt for uses regulated by the Food and Drug Act

CANADA INGREDIENT DISCLOSURE LIST: this product does contain ingredient(s) on the "Ingredient Disclosure List."

CANADIAN ENVIRONMENTAL PROTECTION ACT: All intentional ingredients are listed on the DSL (Domestic Substance List).

EUROPEAN COMMUNITY

EEC LABEL SYMBOL AND CLASSIFICATION

R 34: Causes burns.
R 22: Harmful if swallowed.
S 36, S 39: Wear suitable protective clothing and eye/face protection.
S 24, S 25: Avoid contact with skin or eyes.
S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 28: After contact with skin, wash immediately with plenty of soap and water.
S 46: If swallowed, seek medical advice immediately and show this container or label.

EEC Corrosive – "C"

EUROPEAN COMMUNITY REGULATORY: All intentional ingredients are listed on the European's EINECS inventory.

MEXICO

This product is considered to be corrosive according to Mexican Standard, Instruction No. 9, ANNEX I.

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16. Other Information

SECTION XI - OTHER INFORMATION

NFPA Hazard Rating	Health: 2	Flammability: 0	Reactivity: 0
HMIS Hazard Rating	Health: 3	Flammability: 0	Reactivity: 0
	Personal Protection:		
	H - splash goggles, gloves, synthetic apron, and vapor respirator.		

The information set forth herein has been gathered from standard reference materials and/or Ransom & Randolph Company test data and is, to the best knowledge and belief of Ransom & Randolph Company accurate and reliable. Such information is offered solely for your consideration, investigation and verification and it is not suggested or guaranteed that the hazard precautions or procedures mentioned are the only ones which exist. Ransom & Randolph Company makes no warranties, express or implied, with respect to the use of such information or the use of the specific material identifies here in combination with any other material or process, and assumes no responsibility therefore.