

SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Name: M-A Flux

Product Code: 23904 (4 oz.), 23913 (qt.), 23914 (gal.)

Product Use: Soldering flux for stainless steel, chrome, copper, brass, steel, lead and galvanized iron





Manufacturer: LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL.
60007-5746
E-mail Contact: customer_service@laco.com

Phone Number: (847) 956-7600

Fax: (847) 956-9885

24-hour Emergency: CHEMTREC: (800) 424-9300

Section 2: Hazards Identification

Protective Clothing	NFPA Rating (USA)	EC Classification	WHMIS (Canada)	Transport
		 Corrosive	 Corrosive	May be shipped as a Consumer Commodity (See Section 14)

Emergency Overview:

Danger! Corrosive. Causes burns.

Appearance, Color and Odor: Clear odorless liquid

USA: This product is a hazardous material as defined by 29 CFR1910.1200, OSHA Hazard Communication Evaluation.

Canada: This is a controlled product under WHMIS.

European Communities (EC): This product is classified as dangerous according to Directive 1999/45/EC and its amendments. Classifications: Corrosive.

Potential Health Effects:

ACUTE (short term):

Relevant Route(s) of Exposure:

Inhalation, Eye contact, Skin contact, Ingestion.

Inhalation: Inhalation of mists or fumes generated during use can be severely irritating to the nose, throat and respiratory system and can cause damage to the respiratory system. Symptoms of over-exposure include weakness, dry cough, chest pain, shortness of breath and difficulty breathing.

Ingestion: Corrosive. Causes burns to the mouth, throat and gastro-intestinal system if swallowed. Symptoms are expected to include severe pain, vomiting and bleeding.

Skin: Corrosive. Causes burns with direct contact.

Eye: Severely irritating to the eyes. Causes eye burns. Can cause permanent eye damage. Mists and fumes can cause severe irritation.

CHRONIC (long term):

Prolonged or repeated over-exposure by skin contact may cause skin burns or dermatitis.

Medical Conditions Aggravated by Exposure:

Preexisting respiratory and skin disorders may be aggravated by exposures to mists, fumes and liquid.

Interactions With Other Chemicals:

Not available

Potential Environmental Effects:

Not available

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Section 3: Composition / Information on Ingredients

Hazardous/Dangerous Ingredients:

Chemical Name	CAS No.	Wt. %	EINECS / ELINCS	Symbol	Risk Phrases
Phosphoric acid	7664-38-2	40 - 65	231-633-2	C	R34

See Section 16 for the full text of the R-phrases above.

Section 4: First Aid Measures

Inhalation:	Remove source of contamination or move victim to fresh air. Obtain medical attention immediately.
Eye Contact:	Avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 20-30 minutes, by the clock, while holding the eyelid(s) open. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting. Take care not to rinse contaminated water into the non-affected eye or onto the face. If irritation persists repeat flushing. Quickly transport victim to an emergency care facility.
Skin Contact:	Avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. As quickly as possible, flush contaminated area with lukewarm, gently running water for at least 20-30 minutes, by the clock. If irritation persists, repeat flushing. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting. Under running water, remove contaminated clothing, shoes, and leather goods (e.g., watchbands, belts). Transport victim to an emergency care facility immediately. Completely decontaminate clothing, shoes and leather goods before re-use or discard.
Ingestion:	Get immediate medical attention. Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Quickly transport victim to an emergency care facility.

Section 5: Fire Fighting Measures

Flammable Properties:	Not flammable
Suitable extinguishing Media:	Extinguish fire using appropriate extinguishing media for the surrounding fire. Use water spray to cool fire-exposed containers.
Unsuitable extinguishing Media:	Not available
Explosion Data:	
Sensitivity to Mechanical Impact:	Not applicable
Sensitivity to Static Discharge:	Not applicable
Specific Hazards arising from the Chemical:	If involved in a fire, thermal decomposition may produce toxic and irritating fumes and gases which may include phosphorus oxides, nitrogen oxides and ammonia. Contact with most metals generates highly flammable and explosive hydrogen gas.
Protective Equipment and precautions for firefighters:	Self-contained breathing apparatus and full protective clothing should be worn. Remove all unprotected personnel.
NFPA	
Health:	3
Flammability:	0
Instability:	0

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Section 6: Accidental Release Measures

Personal Precautions:	Wear protective gloves, goggles and clothing. Ventilate the area. Monitor the workplace air for harmful concentrations of vapors and take appropriate precautions if concentrations in air exceed workplace exposure limits.
Environmental Precautions:	Prevent the product from entering sewers or waterways.
Methods for Containment:	Stop the leak if it is safe to do so. Neutralize spilled material with water and soda ash (sodium carbonate). Contain the spill with earth, sand, or other suitable inert absorbent material. Do not absorb with combustible materials, such as sawdust. Do not flush the spill to sewers.
Methods for Clean-up:	Clean up spills immediately. Put material in suitable, covered, labeled chemical waste containers. Contaminated absorbent material may pose the same hazards as the spilled product. Dispose of any contaminated, unusable product as described in Section 13 of this SDS.

Section 7: Handling and Storage

Handling:	This material is corrosive. Prevent the release of mists and vapors of this material into the workplace air. Keep out of reach of children. When handling this product, do not add water in the container. Water, (particularly hot water) added to the concentrated product can cause boiling and splashing.
Storage:	Store in the tightly closed container in a cool, dry area, out of direct sunlight and away from sources of heat and moisture. Product is corrosive to steel and may form flammable gases in contact with metals; store product in its original container. Empty containers may retain product residue, do not re-use containers for other purposes.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines

Consult local authorities for acceptable exposure limits.

<u>Ingredient</u>	<u>ACGIH TLV (8-hr. TWA) (mg/m³)</u>	<u>U.S. OSHA PEL (8-hr. TWA) (mg/m³)</u>	<u>Ontario (Canada) TWA EV (mg/m³)</u>	<u>UK OEL (8-hr. TWA) (mg/m³)</u>
Phosphoric acid	1 3 STEL	1 3 STEL	1 3 STEV	1 2 STEL

STEV = Short Term Exposure Value
STEL = Short Term Exposure Limit

Exposure Controls

Engineering Controls:	Provide adequate ventilation/local exhaust to keep exposure levels below the exposure limits listed above.
Personal Protection:	
Eye/Face Protection:	Wear chemical splash goggles and a full faceshield.
Skin Protection:	Wear impervious protective gloves made of rubber. Wear clean body-covering clothing to prevent skin contact. Wear an impervious apron as needed to prevent skin contact.
Respiratory Protection:	When concentrations in air exceed the occupational exposure guidelines, wear a self-contained breathing apparatus. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 or Canadian Standards Association (CSA) Standard Z94.4-02 must be followed whenever workplace conditions warrant a respirator's use.

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Section 8: Exposure Controls/Personal Protection, continued

NIOSH recommendations for phosphoric acid concentrations in air:
Up to 25 mg/m³: Supplied-air respirator (SAR) operated in a continuous flow mode.
Up to 50 mg/m³: Full-facepiece respirator with high-efficiency particulate filter(s); or full-facepiece Self-contained breathing apparatus (SCBA) or full-facepiece SAR.
Up to 1000 mg/m³: Positive pressure, full-facepiece SAR.
Emergency or planned entry into unknown concentrations or IDLH conditions: Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.
Escape: full-facepiece respirator with high-efficiency particulate filter(s); or escape-type SCBA.
The IDLH concentration for phosphoric acid is 1000 mg/m³.

General Hygiene Measures: Prevent all skin and eye contact. Avoid breathing fumes of this material. Do not ingest. Use this material with adequate ventilation. Keep container closed when not in use. Wash thoroughly after handling this product. Do not eat, drink, smoke while handling this product. Remove contaminated clothing immediately.
Provide eyewash and safety shower stations in workplaces where this flux is handled.

Section 9: Physical and Chemical Properties

Physical State:	Liquid	Flash Point & method:	Not available
Appearance, Color and Odor:	Clear, odorless	Autoignition Temperature:	Not applicable
Odor Threshold:	Not applicable	Flammability Limits in Air:	Not applicable
pH:	<1.5	Vapor Pressure:	Not available
Specific Gravity:	1.53	Vapor Density:	Heavier than air
Partition coefficient: (n-octanol/water)	Not available	Evaporation Rate:	Not available
Solubility in water:	Soluble	Boiling Point/Range:	Not available
Viscosity:	Not available	Melting Point:	Not available
Decomposition Temperature:	Not available	VOC Content:	Not available

Section 10: Stability and Reactivity

Chemical Stability: Stable at normal room temperature.

Conditions to Avoid: Do not use in conditions of extreme heat.

Incompatible Materials: Strong caustics (e.g. potassium hydroxide) - react violently, causing spattering and considerable release of heat.
Strong oxidizing agents, reducing agents or organic peroxides- potentially dangerous reactions can occur.
Azo compounds, expoxides, aldehydes and other polymerizable compounds - can cause violent polymerization.
Metals - forms flammable and potentially explosive hydrogen gas.
Fluorides, halogenated organics, cyanides, sulfides, mercaptans, nitrides, metal phosphides, acetylides, silicides and carbides - form toxic, corrosive and/or flammable gases such as hydrogen fluoride, hydrogen cyanide, hydrogen sulfide, ammonia, phosphine and acetylene.
Nitromethane - addition of phosphoric acid to nitromethane makes nitromethane susceptible to initiation.
Sodium tetrahydroborate (sodium borohydride) - reaction with anhydrous acid is very exothermic (produces a great amount of heat) and may be dangerously violent with rapid mixing.

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Section 10: Stability and Reactivity

Hazardous Decomposition Products:	Toxic and/or irritating phosphorus oxides, nitrogen oxides and ammonia may form when heated to decomposition.
Possibility of Hazardous Reactions:	Very corrosive to ordinary ferrous metals and alloys, particularly when hot. Forms flammable and potentially explosive hydrogen gas which may accumulate in poorly ventilated spaces or confined space.

Section 11: Toxicological Information

Acute Toxicity Data Acute toxicity data is not available for the liquid preparation.

<u>Ingredient</u>	<u>LD₅₀ Oral</u> (mg/kg)	<u>LD₅₀ Dermal</u> (mg/kg)	<u>LC₅₀ Inhalation</u> (4 hrs.)
Phosphoric acid, 85% aqueous solution	3 500 (rat)	Not available	>1 260 (rabbit)

Other Toxicity Data

Carcinogenicity:	This preparation does not contain any component that is considered a human carcinogen by IARC (International Agency for Research on Cancer), ACGIH (American Conference of Governmental Industrial Hygienists, OSHA or NTP (National Toxicology Program).
Irritation:	Severely irritating or corrosive when in contact with skin and eyes. Over-exposure to mists and vapors can be severely irritating to the nose, throat and respiratory tract.
Corrosivity:	Causes burns to eyes and skin.
Sensitization:	Not applicable
Neurological Effects:	Not applicable
Genetic Effects:	Not applicable
Reproductive Effects:	Not applicable
Developmental Effects:	Not available
Target Organ Effects:	Eyes, skin, respiratory system.

Section 12: Ecological Information

Ecotoxicity:	Very low pH solutions are expected to be harmful or toxic to aquatic organisms.
Persistence/Degradability:	Not available
Bioaccumulation/Accumulation:	Not available
Mobility:	Soluble in water, will disperse in aquatic systems.

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Section 13: Disposal Considerations

Waste Disposal Method:	Do NOT dump into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage. The conditions of use, storage and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, LA-CO Industries, Inc. does not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.
USA:	Dispose of in accordance with local, state and federal laws and regulations.
Canada:	Dispose of in accordance with local, provincial and federal laws and regulations.
EC:	Waste must be disposed of in accordance with relevant EC Directives and national, regional and local environmental control regulations. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

Section 14: Transport Information:

UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid), Class 8, PG III	
U.S. Hazardous Materials Regulation (DOT 49CFR):	When packaged in quantities less than 5 L, this material can be shipped as a "Consumer Commodity ORM-D" Exemption. Shipment from US going to Canada may transport as per 49 CFR (TDG Section 9.1)
Canadian Transportation of Dangerous Goods (TDG):	When packaged in quantities less than 5 L this material can be shipped as a "Consumer Commodity" as per part 1.17 of the TDG Regulations. Shipment from Canada to the US may transport as per TDG Regulations (49 CFR Part 171.12a)
ADR/RID:	UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid), Class 8, PG III
IMDG:	UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid), Class 8, PG III; Limited Quantity
Marine Pollutants:	Not listed
ICAO/IATA:	UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid), Class 8, PG III

Section 15: Regulatory Information

USA	
TSCA Status:	All component substances are listed on the TSCA inventory.
SARA Title III	
Sec. 302/304:	None
Sec. 311/312:	Acute health; Corrosive
Sec. 313:	Phosphoric acid
CERCLA RQ:	Phosphoric acid 5 000 lbs (2 270 kg) RQ
California Prop 65:	Not applicable
State Right-to-Know Lists :	Phosphoric acid is listed by Massachusetts, New Jersey, Pennsylvania
Canada	
This product has been classified in accordance with the hazard criteria of the <i>Controlled Products Regulations</i> and the MSDS contains all the information required by the <i>Controlled Products Regulations</i> .	
WHMIS Classification: (for workplace exposures)	E - Corrosive
New Substance Notification Regulations:	All component substances are listed on Canada's Domestic Substances List (DSL).
NPRI Substances:	Phosphates

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Section 15: Regulatory Information, continued

EC Classification for the Substance/Preparation

European Inventories: All component substances are listed in EINECS.

Symbol:



Corrosive

Risk Phrases: R34: Causes burns.

Safety Phrases: S1/2: Keep locked up and out of the reach of children.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Section 16: Other Information

Full Text of R-phrases appearing in Section 2: R34: Causes burns.

Preparation Information:

Prepared by: LEHDER Environmental Services Limited (519) 336-4101
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