SAFETY DATA SHEET

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label M-Prep Conditioner A

Other means of identification Not applicable.

Recommended use of the chemical and restrictions on use

Recommended use: PC14 Metal surface treatment products, including galvanic and electroplating products

Restrictions on use: Anything other than the above.

Details of the supplier of the safety data sheet

Supplier: VISHAY MEASUREMENTS GROUP, INC.
Address of Supplier: Post Office Box 27777
Raleigh, NC 27611
USA
Telephone: +1 919-365-3800
Fax: +1 919-365-3945
E-Mail (competent person): mm.us@vishaypg.com

Emergency telephone number 1-800-424-9300 CHEMTREC (24 hours)

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200

Physical hazards: Corrosive to metals, Category 1.
Health hazards: Not classified.
Environmental hazards: Not classified.

Hazard Symbol

Signal Word(s): Warning

Hazard Statement(s): May be corrosive to metals.

Precautionary Statement(s):
Keep only in original container.
Keep container tightly closed.
Wash hands and exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Absorb spillage to prevent material damage.

Other hazards None known.

Percent of the mixture consists of ingredient(s) of unknown acute toxicity: 0%

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Phosphoric Acid	<6	7664-38-2	231-633-2	Corrosive to metals, Category 1 Skin Corrosion, Category 1B (SCL: ≥ 25 %) Eye Irritation, Category 2 (SCL: 10 % ≤ C < 25 %) Skin Irritation, Category 2 (SCL: 10 % ≤ C < 25 %)

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Self-protection of the first aider	Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Avoid breathing vapours. Avoid contact with skin and eyes. Contaminated clothing should be laundered before reuse.
Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Skin Contact	IF ON SKIN: Wash skin with soap and water. If skin irritation occurs: Get medical advice/attention.
Eye Contact	IF IN EYES: Flush eyes with water for at least 15 minutes while holding eyelids open. If eye irritation persists, get medical advice/attention.
Ingestion	IF SWALLOWED: Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Do not induce vomiting. If symptoms develop, obtain medical attention.
Most important symptoms and effects, both acute and delayed	May cause irritation to eyes, skin and air passages.
Indication of any immediate medical attention and special treatment needed	Unlikely to be required but if necessary treat symptomatically.
Notes to a physician:	None known.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or waterspray.
Unsuitable extinguishing Media	Do not use water jet.
Special hazards arising from the substance or mixture	Not flammable. Reacts with metals liberating hydrogen. Reaction products may include hydrogen cyanide. May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide. May react with some metals including aluminum, magnesium, and zinc, resulting in evolution of phosphorus oxides.
Special protective equipment and precautions for fire fighters	Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Stop leak if safe to do so. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours. Avoid contact with skin and eyes.
Methods and material for containment and cleaning	Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to

up	a container for disposal. Cautiously neutralize remainder. Then wash away with plenty of water. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Avoid breathing vapours. In case of inadequate ventilation wear respiratory protection. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product.
Conditions for safe storage, including any incompatibilities	Keep only in original container. Store in corrosive resistant container with a resistant inner liner. Keep container tightly closed and in a well-ventilated place.
Storage temperature	<27℃
Incompatible materials	May react with some metals including aluminum, magnesium, and zinc, resulting in evolution of phosphorus oxides.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Phosphoric Acid	7664-38-2	-	1	-	3^	NIOSH
		-	1	-	-	OSHA
		-	1	-	3	ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1 / NIOSH RELs / ACGIH TLVs

^NIOSH average value of 15 minutes.

Biological Exposure Indices	Not established
Appropriate engineering controls	Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Atmospheric levels should be controlled in compliance with the occupational exposure limit.
Individual protection measures, such as personal protective equipment (PPE)	General hygiene measures for the handling of chemicals are applicable. Keep good industrial hygiene. Avoid contact with skin and eyes. Avoid breathing vapours. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place. IF exposed: Flush with fresh water if contact with skin or eyes.
Eye/face protection 	Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection.
Skin protection 	**Hand protection:** Wear impervious gloves. Protective index 6, corresponding > 480 minutes of permeation time according to EN 374 Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Neoprene or rubber gloves are recommended. **Body protection:** Wear suitable coveralls to prevent exposure to the skin.

Respiratory protection 	In case of inadequate ventilation wear respiratory protection. A suitable mask with filter type A may be appropriate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear
Odor	Odourless.
Odor Threshold	Not available.
pH	Not available.
Melting Point/Freezing Point	Not available.
Initial boiling point and boiling range	~100℃
Flash Point	Not applicable.
Evaporation rate (Butyl acetate = 1)	Not applicable.
Flammability (solid, gas)	Non-flammable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	~1-1.1 (H2O = 1) (Mixture)
Solubility(ies)	Soluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not applicable.
Decomposition Temperature	Not available.
Viscosity	Not available.

Other information None.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	May react with some metals including aluminum, magnesium, and zinc, resulting in evolution of phosphorus oxides.
Conditions to avoid	None known.
Incompatible materials	Alkaline materials and materials containing chlorine.
Hazardous decomposition product(s)	Oxides of phosphorus.Combustion or thermal decomposition will evolve toxic and irritant vapours.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity - Ingestion	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
Acute toxicity - Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Skin corrosion/irritation	Based upon the available data, the classification criteria are not met.
Serious eye damage/irritation	Based upon the available data, the classification criteria are not met.
Phosphoric Acid:	Test Result: Corrosive (1500.41 in the Federal Register Vol. 38, No. 187, S. 26019 from 1973-09-27)
Respiratory or skin sensitization	Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.

Carcinogenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Aspiration hazard	Based upon the available data, the classification criteria are not met.

Information on likely routes of exposure

Inhalation	Possible – accidental.
Ingestion	Unlikely – accidental.
Skin Contact	Possible – accidental.
Eye Contact	Possible – accidental.

Early onset symptoms related to exposure May cause irritation to eyes, skin and air passages.

Delayed health effects from exposure None known.

Other information

NTP Report on Carcinogens	Not listed.
IARC Monographs	Not listed.
OSHA Designated Carcinogen	Not listed.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
Persistence and degradability	Readily biodegradable.
Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product has high mobility in soil. Phosphoric Acid: Very soluble
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Dispose of this material and its container as hazardous wasteSend after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
Additional Information	Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	**IMDG**	**IATA**
UN number	UN 1760	UN 1760	UN 1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S (Phosphoric Acid)	CORROSIVE LIQUID, N.O.S (Phosphoric Acid)	CORROSIVE LIQUID, N.O.S (Phosphoric Acid)
Transport hazard class(es)	8	8	8
Packing group	III		
Environmental hazards	Not classified	Not classified as a Marine Pollutant.	Not classified
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.		
Special precautions for user	See Section: 2		

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

US Federal Regulations

TSCA (Toxic Substance Control Act)	Phosphoric Acid – Sunject to 25,000 lb reporting threshold.
EPCRA/SARA Section 302 Extremely Hazardous Substances	Not listed.

EPCRA Section 313 Toxics Release Inventory (TRI) Program	Not listed.
NIOSH Occupational Carcinogen List	Not listed.
OSHA List of highly hazardous chemicals, toxics and reactives	Not listed.
NTP Report on Carcinogens (RoC) List	Not listed.
Poison Prevention Packaging Act	Not listed.
US State Regulations	
California State, Proposition 65 List	Not listed.
California State, Safer Consumer Products Regulations	Phosphoric Acid – Candidate Chemcials List.
Maine State, Toxic Chemicals in Children's Products Act	Not listed.
New Jersey State Worker and Community RTK Act	Phosphoric Acid – RTKHSL and SHHSL.
Pennsylvania State, Worker and Community RTK Act	Phosphoric Acid – Hazardous Substance List and Environmental Hazard List.
Rhode Island State, Hazardous Substances RTK Act	Phosphoric Acid – Hazardous Substance List.
Non-Regional	
IARC Monographs, List of Classifications	Not listed.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

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References:
Existing Safety Data Sheet (SDS). EU Data: Harmonised Classification and Existing ECHA registration(s) for Phosphoric Acid (CAS No. 7664-38-2).

GHS Classification of the substance or mixture	Classification Procedure
Corrosive to metals, Category 1	Expert Judgement

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
BEI: Biological Exposure Indices (ACGIH)
IARC: International Agency for Research on Cancer
Irr: Irritation
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: The Occupational Safety & Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PEL: Permissible exposure limit
REL: Recommended exposure limit
SCL: Specific Concentration Limit
Skin": Risk of overexposure via dermal contact
STEL: Short Term Exposure Limit
TLV: Threshold Limit value
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
URT: Upper respiratory tract
vPvB: very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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