SAFETY DATA SHEET

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In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	M-Prep Neutraliser 5A
Other Means of Identification	None

Recommended use and restrictions

Recommended use	PC14 Metal surface treatment products, including galvanic and electroplating products.
Restrictions on use	Anything other than the above.

Initial Supplier Identifier

Company Identification	VISHAY MEASUREMENTS GROUP, INC.
Telephone	Post Office Box 27777 Raleigh, NC 27611 USA
E-Mail (competent person)	mm.us@vishaypg.com

Emergency telephone number

Emergency Phone No.	1-800-424-9300	CHEMTREC (24 hours)
Languages spoken	English	

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)	Not classified as hazardous for supply/use.

Label elements

Hazard Pictogram(s)	None assigned.
Signal Word(s)	None assigned.
Hazard Statement(s)	None assigned.
Precautionary Statement(s)	None assigned.
Other hazards	None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures

GHS Classification

Chemical Name	CAS No.	Concentration (%W/W)	Common name(s), synonym(s) of the substance	Hazard classification
Ammonium Hydroxide*	1336-21-6	0.02	ammonia, anhydrous; ammonia solution	Skin corrosion/irritation - Category 1 Specific target organ toxicity — single exposure - Category 3 (Respiratory tract) Aquatic toxicity, Acute - Category 1
Sodium Tetraborate Pentahydrate*	12179-04-3	0.01	Borax; boric acid, disodium salt	Eye Irritation - Category 2 Reproductive toxicity - Category 1

***** See Section: 8, 11 and 15

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: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
Skin Contact	IF ON SKIN (or hair): 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	None anticipated.
Indication of any immediate medical attention and special treatment needed	Unlikely to be required but if necessary treat symptomatically.

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. Direct water jet may spread the fire.
Special hazards arising from the substance or mixture	Not flammable. May decompose in a fire giving off toxic fumes. When heated, material will emit anhydrous ammonia vapor which necessitates respiratory and eye protection for firefighting.
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.
Environmental precautions	Avoid release to the environment.
Methods and material for containment and cleaning up	Absorb spillage to prevent material damage. Cover spills with inert absorbent material. Neutralize with dilute acid. Ventilate the area and wash spill site after material pick-up is complete.
Reference to other sections	See Section: 8, 13

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. Keep container tightly closed and in a well-ventilated place.
Storage temperature	Store at ambient temperature. <27 ℃

Incompatible materials	Acids, Peroxides, metallic copper, Tin, Zinc and their alloys, halogenated compounds.
Specific end use(s)	See Section: 1.2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

SUBSTANCE	CAS No.	ACGIH® TLV® (ppm)		OSHA PEL (ppm)		Note
		TWA	STEL	TWA	STEL	
Sodium Tetraborate Pentahydrate	12179-04-3	2 mg/m³	2 mg/m³	-	-	A4

Source: ACGIH: American Conference of Governmental Industrial Hygiene. TLV: Threshold Limit Value (ACGIH) No OSHA permissible exposure limit (PEL).
A4: Not Classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of the lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.

British Columbia: Occupational Health and Safety Guidelines, 2015; Northwest Territories: Occupational Health and Safety Regulations, 2012

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Sodium Tetraborate Pentahydrate	12179-04-3	-	2	-	6	WEL
		-	2	-	6	NW

Source: WEL: Occupational Health and Safety Guidelines Part 5: Chemical Agents and Biological Agents (British Columbia)
NW: WSCC, Occupational Health and Safety Regulations, Northwest Territories Volume 3

Ontario: Occupational Health and Safety Act, 1990; Saskatchewan: Occupational Health and Safety Regulations, 1996.

SUBSTANCE	CAS No.	Time Weighted Average (TWA)	STEL (ppm)	Note
Sodium Tetraborate Pentahydrate	12179-04-3	1 mg/m³	-	WEL
		2 mg/m³	6 mg/m³	SK, Respirable Mass Fraction

Source: WEL: Occupational Health and Safety Act, R.R.O. 1990, Regulation 833, CONTROL OF EXPOSURE TO BIOLOGICAL OR CHEMICAL AGENTS (Ontario)
Saskatchewan (SK): Occupational Health and Safety Act, 1993. O-1.1 REG 1 Occupational Health and Safety Regulations, 1996.

Biological limit value	Not established.
Exposure controls	
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. Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Recommended: Neoprene, Rubber.

Body protection:
Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. A suitable mask with filter type A may be appropriate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Colourless liquid.
Odour	Mild ammonia odor.
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	0℃
Initial boiling point and boiling range	100℃
Flash point	Not applicable.
Evaporation rate (Water = 1)	<1 (BuAc = 1)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	760 mmHg @ 100℃
Vapour density	1 (Air = 1)
Relative density	1 (Water = 1)
Solubility(ies)	Soluble in water.
Partition coefficient: n-octanol/water	Not established.
Auto-ignition temperature	Not established.
Decomposition Temperature	Not established.
Viscosity	Not established.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

Other information Volatile Organic Compound Content: 0%

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation will not occur.
Conditions to avoid	Adding Sodium Hydroxide to this material and/or heating will volatize Ammonia.
Incompatible materials	Acids, Peroxides, metallic copper, Tin, Zinc and their alloys, halogenated compounds.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. When heated, material will emit anhydrous ammonia vapor which necessitates respiratory and eye protection for firefighting.

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.
Ammonium Hydroxide	Skin corrosion/irritation - Category 1 No data
Serious eye damage/irritation	Based upon the available data, the classification criteria are not met.
Sodium Tetraborate Pentahydrate	Eye Irritation - Category 2 Irritating to eyes. (U.S. EPA OPP 81-4)
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.
Sodium Tetraborate Pentahydrate	Reproductive toxicity - Category 1 Rats exposed to the high dose of 336 mg/kg bw boric acid (corresponding to a level of 58.5 mg B/kg bw) were sterile. (Weir RJ & Fisher RS, 1972)
STOT - single exposure	Based upon the available data, the classification criteria are not met.
Ammonium Hydroxide	Specific target organ toxicity — single exposure - Category 3 No data
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.
Other information	None known.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity	Based upon the available data, the classification criteria are not met.Estimated Mixture LC50 > 100 mg/l. (Fish)
Ammonium Hydroxide	Aquatic toxicity, Acute - Category 1 Acute: No data Chronic: No data
Persistence and degradability	Readily biodegradable.
Bioaccumulative potential	The product has no potential for bioaccumulation.
Mobility in soil	The product is predicted to have high mobility in soil. Soluble in water.
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Neutralize absorbent material with dilute acid. Dispose of this material and its container as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.

SECTION 14: TRANSPORT INFORMATION

Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'.

		ADR/RID	IMDG	IATA/ICAO
14.1	**UN number**	Not classified	Not classified	Not classified
14.2	**UN proper shipping name**	Not classified	Not classified	Not classified
14.3	**Transport hazard class(es)**	Not classified	Not classified	Not classified
14.4	**Packing group**	Not classified	Not classified	Not classified
14.5	**Environmental hazards**	Not classified	Not classified as a Marine Pollutant.	Not classified
14.6	**Special precautions for user**	See Section: 2		
14.7	**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable		

SECTION 15: REGULATORY INFORMATION

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

National regulations

CEPA, Domestic Substances List	Ammonium Hydroxide: Yes Sodium Tetraborate Pentahydrate: Yes
CEPA, Priority Substances List	All chemicals are not listed
CEPA, List of Toxic Substances (Schedule 1)	Ammonium Hydroxide: Item 53
CEPA, National Pollutant Release Inventory	All chemicals are not listed
CEPA, Environmental Emergency Regulations	Ammonium Hydroxide: Part 2: Substance Hazardous When Inhaled. Concentration ≥ 20% w/w. Volume (Minimum): 9.1 tonnes (metric).
CEPA, VOC Specific Concentration Limit for Architectural Coatings Regulations	All chemicals are not listed
CEPA, VOC Specific Concentration Limit for Automotive Refinishing Products Regulations	All chemicals are not listed

Non-Regional

IARC Monographs**,** List of Classifications	All chemicals are not listed

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Not applicable – V1.0

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References:

Existing Safety Data Sheet (SDS).
EU: Harmonised Classification(s) for Ammonium Hydroxide (CAS No. 1336-21-6), Sodium Tetraborate Pentahydrate (CAS No. 12179-04-3). Existing ECHA registration(s) for Ammonium Hydroxide (CAS No. 1336-21-6), Sodium Tetraborate Pentahydrate (CAS No. 12179-04-3), and the Classification and Labelling Inventory for Trisodium Phosphate (CAS No. 10101-89-0).

Literature References:

1. Weir RJ & Fisher RS. 1972. Toxicologic studies on borax and boric acid. Toxicology and Applied Pharmacology 23: 351 - 364.

LEGEND

LTEL: Long Term Exposure Limit
DNEL: Derived No Effect Level
PBT: PBT: Persistent, Bioaccumulative and Toxic
IARC: International Agency for Research on Cancer
OSHA = Occupational Safety and Health Administration
ACGIH: American conference of Governmental Industrial Hygiene
TLV: Threshold Limit Value (ACGIH)
VOC: Volatile Organic Compound
CEPA (Canadian Environmental Protection Act)
STEL: Short Term Exposure Limit
PNEC: Predicted No Effect Concentration
vPvB: very Persistent and very Bioaccumulative
NTP: National Toxicology Program
NIOSHTIC: National Institute for Occupational Safety and Health Technical Information Center
BEI: Biological Exposure Indices (ACGIH)
TWA: Time Weighted Average
EU: European Union

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