Section 1: Identification of the Material and Supplier

Product Name: **Rust & Scale Remover**

Other Names: Aqueous solution containing phosphoric and sulphuric acids.

Proper shipping name (ADG Code): UN 3264
Corrosive liquid, acidic, inorganic, n.o.s.
(phosphoric acid, sulphuric acid)

Recommended use: To remove rust and scale from metal parts.
Use as directed on the product label.

Supplier: **Hunters Products (TAS) Pty. Ltd.,**
A.C.N. 004 601 263

HEAD OFFICE	**HOBART OFFICE**	**BURNIE OFFICE**
60 Gleadow Street,	105 Albert Road,	22 Pearl Street,
INVERMAY TAS 7248	MOONAH TAS 7009	WIVENHOE TAS 7320
Tel: 03 6331 4755	Tel: 03 6228 7955	Tel: 03 6431 9627
Fax: 03 6334 1065	Fax: 03 6228 7988	Fax: 03 6432 2083

Emergency Phone Numbers:

Transport/Fire Emergency:	**000**	(Emergency services)
Medical Emergency:	**131126**	(Poisons Information Centre)

Section 2: Hazards Identification

Classified as hazardous according to criteria of Worksafe Australia.

Dangerous goods.

Risk Phrases: R: 34 Causes burns.

Safety Phrases:

S: 1/2	Keep locked up and out of the reach of children.
S: 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S: 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Section 3: Composition/Information on Ingredients

Ingredients:

Phosphoric acid	[7664-38-9]	30 - 60 %
Sulphuric acid	[7664-93-9]	< 10 %
Other ingredients deemed not to be hazardous		< 10 %
Water	[7732-18-5]	to 100 %

Section 4: First Aid Measures

For advice, contact a Poisons Information Centre (Phone 131126) or a doctor.

Swallowed: If swallowed, do NOT induce vomiting.

Skin: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Eyes: If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.

Inhaled: Remove from exposure, rest and keep warm. Seek medical advice.

First Aid facilities:

Mandatory: Eye wash. Hand wash basin.

Recommended: Emergency shower if handling industrial quantities.

Advice to Doctor:

Product is a mixture of phosphoric and sulphuric acids in solution. Corrosive by all routes. Contact Poisons Information Centre.

Aggravated medical conditions:

No specific data found.

Section 5: Fire Fighting Measures

HAZCHEM Code: 2 X

Evacuate: No.

Extinguishant: Water fog or fine water spray.

Risk of violent reaction or explosion: No.

Products of combustion: Oxides of phosphorus, oxides of sulphur.

Protective Equipment: Full protective clothing including breathing apparatus and protective gloves.

Section 6: Accidental Release Measures

Emergency Procedures:
Contain.

For large spills:
Contain spillages with sand or earth. Transfer both liquid and solids to suitable container(s). Treat residues as for small spills.

For small spills:
Spillages may be neutralised by the liberal application of soda ash. If local regulations permit, mop up with plenty of water and run to waste, diluting greatly with running water. Otherwise, absorb on inert absorbent and transfer to suitable closed container. Wash site of spillage thoroughly with water.

Section 7: Handling and Storage

Precautions for safe handling:
Avoid contact with skin and eyes.
Keep away from alkalis.

Conditions for safe storage:
Store in a cool, well ventilated place, out of reach of children. Large quantities should be stored in a bunded dangerous goods store. Store in original container. Keep container tightly closed and out of direct sunlight. Keep away from alkalis. Protect from physical damage. Clean up all spills and splashes promptly; avoid secondary accidents.

Incompatibles:
Alkalis.

Section 8: Exposure Controls/Personal Protection

National Exposure Standards:

ES-TWA:	Phosphoric acid	1 mg/m³
	Sulphuric acid	1 mg/m³
ES-STEL:	Phosphoric acid	3 mg/m³
	Sulphuric acid	3 mg/m³
ES-PEAK:	None assigned.	

Notations: None assigned by NOHSC, but see:

Sulphuric acid	*Skin*	[Finland, Russia]
	Suspected human carcinogen	[ACGIH]

[Skin] indicates that this material may be absorbed via unbroken skin, and any such contact may invalidate the TLV.

Biological Limit Values: No data found.

Engineering Controls:
Avoid using active metals or wood as materials of construction.
Ensure adequate ventilation (same as outdoors) when using.
If handling industrial quantities, or if vapour risk exists, consider local mechanical exhaust/extraction to keep airborne contamination as low as possible and at least below the TLV.

Personal Protective Equipment:
Avoid contact with skin and eyes. Avoid breathing aerosols.
Personal protection to be selected from those recommended below, as appropriate to mode of use, quantity handled and degree of hazard:-

Normal Use:
Eye/face protection
Gloves, rubber or plastic.

Industrial Quantities:
Face shield or safety glasses
Gloves, rubber or plastic
Plastic apron, sleeves and boots
Impervious overalls.

Section 9: Physical and Chemical Properties

Appearance:	Clear, green, mobile liquid.
Odour:	Almost odourless.
pH:	About 1 Very acidic.
Vapour Pressure:	No data.
Vapour Density:	No data.
Boiling Point:	> 100 °C
Melting Point:	No data.
Volatiles:	About 52 %
Volatile Organic Compounds (VOC):	< 1 %
Evaporation Rate:	No data.
Solubilities:	Miscible with water in all proportions.
Specific Gravity/Density:	About 1.3 g/mL @ 20 °C
Flash Point:	None.
Flammable Limits:	None.
Dust Explosion:	Not applicable.
Auto-ignition Temperature:	No data.

Other Information:
Very acidic mixture. Will react vigorously or violently with alkalis. Contact with carbonates or bicarbonates will generate carbon dioxide, a simple asphyxiant. Slightly corrosive to most metals, generating hydrogen, a flammable gas. Corrosive to concrete.

Section 10: Stability and Reactivity

Chemical Stability: Stable under normal conditions.

Conditions to Avoid: Incompatible materials.

Incompatible Materials: Alkalis (including carbonates and bicarbonates), metals, calcium salts.

Hazardous Decomposition Products: Oxides of phosphorus, oxides of sulphur.

Hazardous Reactions: Will react vigorously or violently with alkalis. Contact with metals may generate hydrogen. Contact with carbonates or bicarbonates will generate carbon dioxide.

Section 11: Toxicological Information

Health Effects:

No data available for the mixture. Information presented relates to individual ingredients.

Acute:

Swallowed: May be fatal. Corrosive. May cause burns to mouth, throat and gastrointestinal system, possible haemorrhaging of the digestive tract. Small doses may cause a burning sensation, gastric upset, abdominal pain or cramps, nausea, vomiting and diarrhoea. Larger doses may cause shock, clammy skin, weak and rapid pulse, shallow breathing, reduced urine output and death.

Skin: Corrosive, causes serious burns.
May cause redness, pain, blisters and burns.

Eyes: Corrosive. May cause redness, pain, blurred vision, serious eye damage.
Risk of permanent injury, and permanently impaired vision.

Inhaled: Aerosols will cause irritation of the upper respiratory system. May cause burns to lung tissues. Over-exposure may cause pulmonary oedema (fluid build-up in the lungs) which may be made worse by physical exertion. Onset of symptoms may be delayed.

Chronic: Prolonged or repeated low-level exposure may cause skin irritation and possible burns. Repeated inhalation exposure may cause damage to the teeth, mouth, throat and respiratory tract.
Sulphuric acid mist has been classified by IARC as Group 1; carcinogenic to humans. **(1)**

LD_{50} :	Phosphoric acid	1,250 mg/kg oral, rat. 2,740 mg/kg skin, rabbit.
	Sulphuric acid	350 mg/kg oral, rat.
LC_{50} :	Phosphoric acid	25.5 mg/m³, rat.
	Sulphuric acid	510 mg/m³/2 hours, rat.

Section 12: Ecological Information

Ecotoxicity: Harmful to aquatic organisms.

Persistence and degradability: No data.

Mobility: Readily transported by water.

Environmental Fate: No data.

Bioaccumulative potential: No data.

Other adverse environmental effects: Contains a high proportion of phosphate. May contribute to the development of algal blooms in natural waters.

Section 13: Disposal Considerations

The generator of any wastes from this product is responsible for its proper classification, transport and disposal.

Consult appropriate local and State regulations.
Contains sulphuric acid. Disposal of acidic sulphates to concrete sewers may be controlled by local authorities.

Disposal methods and containers:
Avoid disposal to sewer, natural waters or the environment.
Avoid using metal containers.

Special precautions for landfill or incineration:
Unsuitable for incineration.
May be unsuitable for some landfill sites, even after complete neutralisation.

Section 14: Transport Information

UN Number: UN 3264

UN Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (phosphoric acid, sulphuric acid)

Class and subsidiary risk: 8 Corrosive.

Packaging group: II

Special precautions for user: Do not store or transport with dangerous goods of classes 1, 4.3, 5.1, 5.2, 6 (cyanides), 7, foodstuff and foodstuff empties.
Contain spillages.

HAZCHEM Code: 2 X

Material for export: Regulated.
Refer to **IMO/IMDG** and **IATA/ICAO**.

Section 15: Regulatory Information

Poisons (SUSDP): Schedule 6
Phosphoric acid > 35 %, and
Sulphuric acid > 0.5 %

Dangerous Goods: Yes. UN 3264 8/II 2 X.

Carcinogen:	**Australia**	**IARC**	**NTP**	**RTECS**
	No.	Yes.(1)	Yes.(2)	No.

Agricultural and Veterinary Chemicals Act: Not applicable.

Australian Inventory of Chemical Substances (AICS): Listed.

Other National/International Regulations: No data.

Section 16: Other information

Date of MSDS update: October 2007
Complete review and re-write of all sections.

Abbreviations:
NOHSC - National Occupational Health and Safety Commission.
ACGIH - American Conference of Governmental Industrial Hygienists.
MAK - Maximum workplace concentration - Germany, (*maximale Arbeitsplatzkonzentration*)
IARC - International Agency for Research on Cancer (France).
NPT - National Toxicology Program (USA).
RTECS - Registry of Toxic Effects of Chemical Substances.

Literature references:
(1) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. v.54, p.41, 1992.*

(2) *NTP 11th Annual Report on Carcinogens. 2004.*

Other Available Sources of Data:
National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [2011(2003)] - NOHSC.
Australian Dangerous Goods Code.
Standard for the Uniform Scheduling of Drugs and Poisons - AHMAC.
Exposure Standards for Atmospheric Contaminants in the Occupational Environment [1003]- NOHSC.
List of Designated Hazardous Substances [10005] - NOHSC.
Merck Index - Merck Inc.
Sax's Dangerous Properties of Industrial Materials - Lewis.
Handbook of Toxic and Hazardous Chemicals and Carcinogens - Sittig.
Handbook of Reactive Chemical Hazards - Bretherick.
Hawley's Condensed Chemical Dictionary - Wiley Interscience.
AUSREG's Chemical Data Package for PCs - AUSREG Consultancy.