Marc Forrest Pty Ltd
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Safety Data Sheet
Issued Date: November 2019

1. COMPANY AND PRODUCT IDENTIFICATION

1.1	Identification – Product Name:	Auto Dishwash Liquid
1.2	Other means of identification	Machine Dish Wash Liquid; ADWL; Auto Dish Wash Liquid; DWash Liq-Auto PYel Chlo
	Synonym:	L0043
1.3	Recommended Use of the Chemical and Restrictions on Use:	Cleaning aid in Automatic Dishwashing Machines
1.4	Name, Address, And Telephone Number of the Manufacturer, Or Other Responsible Party:	Christopher Bright
		P.O. Box 2300
		Moorabbin VIC 3189
	Competent Person email address	christopheribright@gmail.com
1.5	Poisons Hotline (24 hrs):	13 11 26

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is translucent pale yellow liquid with chlorine odour. This product is corrosive to metals. Causes serious eye damage and skin corrosion (burns) if skin or eye contact occurs.

Physical Hazards Summary		Corrosive to metals, Category 1	
Potential Health Hazards Summary		Skin corrosion, Category 1 Serious eye damage, Category 1	
Potential Ecological Effects Summary		Not classifiable	
2.1	Classification of Product		
	Classification as per GHS (Rev 3)/2009	Corrosive to metals, Category 1 Skin corrosion, Category 1 Eye damage, Category 1	
2.2	Label Elements GHS		
	Signal Word	**DANGER**	
	Hazard Statements	H314 H318 H290	Causes severe skin burns and eye damage. Causes serious eye damage. May be corrosive to metals.
	Precautionary Statements: Prevention	P264 P280 P261 P272 P273	Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing mist, vapours or spray. Contaminated clothing should not be allowed out of the workplace. Avoid release to the environment.
	Precautionary Statements: Response	P305+P351+P338+P310 P302+P352 P321 P363 P333+P313 P301+P310	IF IN EYES rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN wash with soap and water. Specific treatment: See first aid section on this SDS. Wash contaminated clothing before reuse. If skin irritation or a rash occurs, get medical advice/attention. IF SWALLOWED immediately call a POISON CENTER.

	Precautionary statements: Storage	None	None
	Precautionary Statements: Disposal	P501	Dispose of contents/container in accordance with all federal, state and local regulation.
	Hazard pictograms		
2.3	Unclassified Hazards	None	
2.4	Ingredients with unknown acute toxicity	None	

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical name (CAS #)	% w/w	GHS
Sodium Metasilicate (CAS # 6834-92-0)	<10%	Acute oral toxicity, Category 4 (H303) Skin corrosion, Category 1 (H314) Eye damage, Category 1 (H318) Specific target organ toxicity, single exposure (respiratory system), Category 3 (H335)
Potassium Hydroxide (CAS # 1310-73-2)	<20%	Acute oral toxicity, Category 4 (H303) Skin corrosion, Category 1 (H314)
Sodium Hydroxide (CAS # 1310-73-2)	<20%	Corrosive to metals, Category 1 (H290) Skin corrosion, Category 1 (H315) Serious eye damage, Category 1 (H318)
Sodium Hypochlorite (CAS # 7681-52-9)	<10%	Sodium Hypochlorite (CAS # 7681-52-9)
Non-hazardous components (CAS # N/A)	>60%	Not classifiable as hazardous under the GHS

4. FIRST-AID MEASURES

4.1	Description of Necessary Measures	
	Skin exposure:	If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim should seek immediate medical attention if any adverse exposure symptoms develop or irritation persists.
	Eye exposure:	If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Victim should "roll" eyes while being flushed. Minimum flushing is for 15 minutes. Seek medical attention immediately.
	Inhalation:	If this product is inhaled, remove victim to fresh air and place in a position comfortable for breathing. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.
	Ingestion:	If this product is swallowed, CALL POISION CENTER or PHYSICIAN FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. Mouth should be rinsed with water if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.
4.2	Most Important Symptoms/Effects:	Immediate: Inhalation exposure may cause coughing or sneezing/respiratory tract irritation or difficulty breathing. Symptoms of skin and eye contact may include redness and irritation. Ingestion may cause stomach pains, cramps, and gastritis. Delayed: Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin).
4.3	Indication Of Immediate Medical Attention And Special	None known. **TARGET ORGANS:** Acute: Eyes, Skin

	Treatment Needed, If Necessary:	
Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Rescuers should be taken for medical attention if necessary. Take a copy of label and SDS to physician or health professional with victim.		

5. FIRE-FIGHTING MEASURES

Flammability properties		Flash Point °C: Not applicable
		Auto-ignition Temperature °C: Not evaluated
		Flammable Limits (in air by volume, %): Not evaluated
5.1	Suitable and Unsuitable Extinguishing Media:	This material should not contribute to the intensity of a fire. Use extinguishing material suitable for ordinary combustibles. Water spray NO Carbon dioxide YES Foam YES Dry chemical YES Halon YES Other
5.2	Specific Hazards Arising from Chemical:	When involved in a fire, this material may decompose and produce irritating fumes and toxic gases. Explosion Sensitivity to Mechanical Impact: None. Explosion Sensitivity to Static Discharge: Vapours are not expected to ignite
5.3	Special Protective Equipment and Precautions for Fire-Fighters:	Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.
5.4	HAZCHEM Code	Not applicable.

6. ACCIDENTAL RELEASE MEASURES

6.1	Personal Precautions	Uncontrolled releases should be responded to only by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people.
	Protective equipment:	For small releases (< 20 litres), clean up spilled liquid wearing gloves, goggles, face shield, and suitable body protection. Absorb with earth, sand or other non-combustible material and transfer to containers for proper disposal. Prevent further leak/release if it is safe to do so. Do not let the product enter drains.
	Emergency procedures:	Eliminate all ignition sources. Stop leak if you can do so without risk. Monitoring must indicate that exposure levels are below those provided in Section 8 (Exposure Controls-Personal Protection) and that oxygen levels are above 19.5% before anyone is permitted in the area without Self-Contained Breathing Apparatus.
6.2	Environmental Precautions	Prevent release into the environment. Do not discharge into sewers or waterways. May produce adverse effects to marine organisms and their environment. If the product enters soil it will be highly mobile and may contaminate groundwater.
6.3	Methods and Materials for Containment and Cleaning Up	Use absorbent material for cleaning up spills. Collect spilled material for proper disposal. Decontaminate the area thoroughly. Place all spill residues in a suitable container. Dispose of in accordance with applicable Australian Federal, State, or local procedures, or appropriate local standards.

7. HANDLING and STORAGE

7.1	Precautions for Safe Handling	All employees who handle this material should be trained to handle it safely. Open containers carefully on a stable surface. Ensure all connections are tight before transfer. Empty containers may contain residual liquid; therefore, empty containers should be handled with care. Keep away from ignition sources; no smoking. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing promptly.

7.2	Conditions for Safe Storage	Keep containers tightly closed. Store individual containers out of direct sunlight. Tanks should be stored away from intense heat or direct sunlight. Avoid freezing. Store away from incompatible materials. Material should be stored in secondary containers, or in a diked area, as appropriate. Storage and use areas should be covered with impervious materials. Keep container tightly closed when not in use. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labelled and not damaged.
	Incompatibilities	No significant incompatibilities are expected.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

8.1	Appropriate Engineering Controls.	Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. Avoid generating and inhaling mists. Use with local exhaust ventilation or while wearing organic vapour respirator or particulate respirator meeting the requirements of AS1715 and AS1716. Keep containers closed when not in use.			
8.2	Personal Protective Equipment				
	Respiratory protection:	None needed under normal conditions of use. Use only approved respirators if ventilation is inadequate to control mists or vapour.			
	Eye protection:	Use approved safety goggles or safety glasses. Splash goggles with a face shield may be needed if splash hazards exist.			
	Hand protection:	Wear chemical impervious gloves (e.g., Solvex™, Neoprene, Nitrile).			
	Body protection:	None normally needed. If needed, use body protection appropriate for task (e.g., Tyvek suit, rubber apron) to protect from splashes and sprays. Nomex coveralls are recommended for handling bulk product.			
8.3	Biological monitoring	Biological monitoring is required if ventilation is inadequate to maintain concentration of airborne hazardous chemicals below the following exposure standards. STEL sets the *short term exposure limit*, which is the maximum concentration of a substance to which a person can be exposed over a 15-minute period. The TWA sets a time-weighted average airborne concentration to which a person may be exposed. This product is a mixture. The following sets exposure standards only for its constituent parts. Exposure standards have not been determined for this product as a whole.			
8.3.1	Exposure standards [NOHSC:1003(1995)]	TWA (ppm)	TWA (mg/m^3)	STEL (ppm)	STEL (mg/m^3)
	Potassium Hydroxide	-	2 (Peak)	-	-
	Sodium Hydroxide	-	2 (Peak)	-	-

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance	This product is a translucent liquid		
Odour	Chlorine	Odour Threshold	Not applicable
Melting Point °C	Not evaluated	pH	14
Initial Boiling Point °C	>100 °C	Boiling Point Range °C	Not evaluated
Flammability	Not flammable	Evaporation Rate (n-butyl acetate = 1)	Not evaluated
Vapour Density (air = 1)	Not evaluated	Vapour Pressure mm Hg @ 20°C:	Not evaluated
Solubility (in water)	Completely soluble	Relative density (water = 1)	1.18
Viscosity	Water-thin	Oil-Water Partition Coefficient	Not evaluated
How To Detect This Substance (Warning Properties):	This product will smell like chlorine		

10. STABILITY and REACTIVITY

10.1	Reactivity	Expected to be stable over a range of operating conditions.
10.2	Chemical Stability	Stable under normal use and storage.
10.3	Possibility of hazardous reactions	Hazardous polymerization will not occur.
10.4	Conditions to avoid	Avoid mixing with incompatible substances.
10.5	Incompatible materials	No significant incompatibilities are expected for this product.
10.6	Hazardous decomposition products	This product is not expected to have any significantly hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

11.1 Toxicology Information

Note: This product has not been evaluated for its toxicity as a whole.

Component	Oral LD_{50} (mg/kg)	Dermal LD_{50} (mg/kg)	Inhalation LC_{50} (mg/m^3)	Skin Irritation	Serious eye damage
Sodium Metasilicate (CAS # 6834-92-0)	847 mg/kg (Rat)	No data available	No data available	YES	YES
Potassium Hydroxide (CAS # 1310-73-2)	333 mg/kg (Rat)	No data available	No data available	YES	YES
Sodium Hydroxide (CAS # 1310-73-2)		No data available	No data available	YES	YES

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.1 Ecological Information

Note: This product has not been evaluated for its ecologic impact as a whole.

Component	Toxicity to fish	Toxicity to daphnia	Bioaccumulation	Solubility	Biodegradability
Sodium Metasilicate (CAS # 6834-92-0)	2320 mg/L (LC50, 96 hr, *Gambusa affnis*)	247 mg/L (EC50, 48 hr, *Daphnia magna*)	No data available	Soluble	No data available
Potassium Hydroxide (CAS # 1310-73-2)	80 mg/L (LC50. 96 hr, Mosquito fish)	No data available	No data available	No data available	No data available
Sodium Hydroxide (CAS # 1310-73-2)	45.4 mg/L (LC50, 96 hr, freshwater fish)	No data available	Not expected	Soluble	No data available

12.2	Persistence and Degradability	This product is expected to be readily biodegradable.
12.3	Bio-accumulative Potential	This product is not expected to bio-accumulate.
12.4	Mobility in Soil	When spilled onto soil, this product is expected to evaporate slowly.
12.5	Other Adverse Ecological Effects	This product may be harmful to aquatic life if large volumes of it are released into an aquatic environment.

13. DISPOSAL CONSIDERATIONS

	Preparing Wastes of this Product for Disposal	Waste disposal must be in accordance with appropriate Australian Federal, State, and local regulations or with local regulations.
	Disposal of Contaminated Packaging	Cleaned containers can be recycled or disposed of as non-contaminated waste, if authorized by your local authorities. Dispose of containers as required by local regulations.

14. TRANSPORT INFORMATION

Australian Domestic

14.1	UN Number	1814
14.2	Proper Shipping Name or Technical Name	POTASSIUM HYDROXIDE SOLUTION
14.3	Transport Hazard Class(es)	8
	Transport label(s) required	CORROSIVE
14.4	Packing Group	II
14.5	HAZCHEM Code	2R
14.6	Environmental Hazards for Transport Purposes	N/A
14.7	Special Precautions for User	Alkaline liquid. Ship with caution. Store away from acids. Avoid moisture.
14.8	Additional information	N/A

15. REGULATORY INFORMATION

International

Part	Regulatory Programme	Classification
15.1	Montreal Protocol	Not applicable
15.2	The Stockholm Convention	Not applicable
15.3	The Rotterdam Convention	Not applicable
15.4	Basel Convention	Not applicable
15.5	International Convention for the Prevention of Pollution from Ships	Not applicable

Australian Commonwealth and State Regulations

Part	Regulatory Programme	Classification
15.6	Medicine/Poisons Schedule Number	Poisons, S 6
15.7	Prohibition/ Notification/ Licensing requirements?	Not applicable
15.8	Controlled usage under *Agricultural and Veterinary Code Act 1994* (Cth) or otherwise (and any applicable Commonwealth, State or Territory control-of-use legislation)	Not applicable
15.9	Chemical listed on the Australian Inventory of Chemical Substances (AICS)? (See *Industrial Chemicals (Notification and Assessment) Act 1989* (Cth) (and any condition of use associated with the listing on the AICS)	All ingredients in the product are listed on the AICS

16. OTHER INFORMATION

16.1	Original Preparation	18 November 2019
16.2	Revision History	0.0 November 2019
16.3	Prepared by	Marc Forrest Pty Ltd PO Box 2300 Moorabbin VIC 3189

DEFINITIONS OF TERMS

16.5	A large number of abbreviations and acronyms appear on this SDS. The following constitutes definitions of those commonly used terms.	
	Section 2	**GHS**: Global Harmonization System **Model WHS:** Australia's model Workplace Health and Safety Guidelines **CLP**: Classification and Packaging **STOT**: Specific Target Organ Toxicity
	Section 3	**CAS #:** Chemical Abstract Service index number
	Section 5	**Health Hazard: 0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). **Flammability Hazard** **Reactivity Hazard:** Refer to definitions for "Hazardous Materials Identification System". **Flash Point**: Minimum temperature at which a liquid gives off sufficient vapours to form an ignitable mixture with air. **Auto-ignition Temperature:** The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL:** The lowest percent of vapour in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL**: The highest percent of vapour in air, by volume, that will explode or ignite in the presence of an ignition source.
	Section 8	**TLV -** Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered **IDLH -** Immediately Dangerous to Life and Health **-** This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE (Not Established)** is made for reference.
	Section 11	**LD_{50}** : Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** : Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm:** Concentration expressed in parts of material per million parts of air or water; **mg/m^3** : Concentration expressed in weight of substance per volume of air; **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.
	Section 12	**LC_{50}:** The lowest concentration in water which kills 50% of the test subjects. **EC_{50}:** The Effect Concentration in water at which 50% of the test species if affected.

DISCLAIMER

The information in this SDS has been provided in good faith, and is believed to the best of the author's knowledge to be accurate as of the date of preparation. However, the author does not represent this to be a comprehensive and exhaustive assessment of the product's risks. There is always a chance that risks were beyond the state of scientific knowledge at the time of writing. It is expected that individuals receiving the information will exercise their independent judgement in determining its appropriateness for a particular purpose. **Accordingly, we shall not be responsible for damages of any kind resulting from the use or reliance upon the information in this document.**