Chemical Tanks

Installation, Operation & Maintenance Manual

Contents

Company Profile

ABOUT POLYMASTER

Polymaster manufactures an extensive range of quality products for industrial, residential and agricultural applications. Over the last two decades, Polymaster has been at the forefront of industry endorsed, product certified designs that have advanced the life-span and functional capabilities of process vessels, bulk storage, rainwater tanks and animal care products. As an Australian owned, quality assured company.

Polymaster delivers every product to specification with confidence through our growing network of distributors.

PRODUCT DEVELOPMENT

We continue to extend our manufacturing operations to achieve market diversification and operational longevity. Our Design & Mould team offers custom design solutions and continual scope for new product development, product improvements and modifications. Coupled with our ability to customize colours to specification and apply brand identities on request, Polymaster delivers on quality and quantity, on time and within budget.

LOGISTICS CAPABILITIES

Polymaster's distribution fleets are experienced in over dimensional loads, general freight and site handling, providing the flexibility and capability to deliver every Polymaster product. Our manufacturing locations in Victoria and New South Wales supported by warehouses in Melbourne and Adelaide supply direct freight lines to Melbourne, Adelaide and Sydney. To service deliveries nationwide over time we have established quality relations with proven logistics channels. Bulk storage capacity and warehouse pick-up capabilities are available from Metropolitan Melbourne and Adelaide.

Quality Assurance & Certification

Polymaster Industrial as a Quality Certified Company has a regimen of quality systems in place. These systems are recognised and certified internationally to ISO9001.

PREMIUM MATERIALS:

Insisting on the finest quality components and proven manufacturing procedures.

Polymaster Industrial exclusively uses premium resins in the manufacture of all Polyethylene products within the range, fully UV stabilised to AS4766 in all colours.

ENGINEERED:

Product Design & Mould operations see the extensive use of FEA testing and engineering, all Polymaster Industrial products are thoroughly tested and trialled before being released to the public.

CERTIFICATION:

Polymaster Industrial Tanks are Independently Certified to AN/NZS 4766:2006 Polyethylene Tank Standard for Water & Chemicals. This certification is provided by SAI Global.

THE BENEFITS:

Product Certification by an independent testing authority is your best guarantee of a quality, long lasting product.

Polymaster has full Certification on all Corrugated Tanks.

Every tank is labelled with the full manufacturing details including a serial number for complete traceability.

Product Certification License No: SMKP 21429*

* License applies to tank only

Granted to: Polymaster Pty Ltd by BSI Benchmark

Manufactured to: AS/NZS 4766:2006

Polyethylene storage tanks for water and chemicals

AS/NZS 4766:2006
BMP 657671
AU/NZS Standards

Quality Certified Company ISO 9001

Introduction

Congratulations for purchasing one of Polymaster's quality Industrial Tanks. Ensure this product is correctly installed, operated and regularly maintained and it should give you trouble free service for years to come.

This Guide should be read in conjunction with the Chemical Tanks Guide as that guide contains information specific to the tank itself.

CORRECT TANK INSTALLATION IS THE SOLE RESPONSIBILITY OF THE PURCHASER.

The following content is a guide only. Any vehicle/machinery affected negatively or positively is not covered by the Industrial Tanks warranty.

READ OPERATION MANUAL IN DETAIL BEFORE USE & COMPLY WITH ALL INSTRUCTIONS HEREIN.

OPERATION MANUAL SHOULD BE KEPT WITH THE EQUIPMENT AT ALL TIMES.

Safety Guide

A. This manual contains important information concerning the safe installation and use of this product. Read the manual carefully before installation and use. Pay attention to all safety warnings.

B. Installation and use of this product should only be carried out by properly trained and approved personnel.

C. Users of this product are responsible for the safe and correct use of this product.

D. Any changes to this product, which have been done without consulting the manufacturer, will invalidate all warranties and guarantees.

E. The components must not be altered or tampered with, due to potential risks to personnel.

F. The manufacturer will not be responsible for any accidents or damages caused by incorrect installation or use of this product.

G. This product is only suitable for storage and dispensing of Polymaster approved chemicals.

H. Chemicals and Diesel Fuel, other than water being stored must be kept away from skin, eyes and never taken internally. Refer to the product specific MSDS (Provided by others) and Poisons Information for assistance.

Selecting a Safe Location

GENERAL LOCATION

There are many aspects to consider when selecting the best location for your tank. Some points to consider are:

- Excessive wind or seismic forces
- Area subject to flooding
- Bund containment required
- Safe distance from any source / equipment generating heat or flames
- Generally accessible location to ensure safe operation and maintenance.

REGULATIONS

There may be local, state or national regulations that apply to your proposed tank installation. Check with the relevant authorities concerned to ensure all requirements are complied with.

A thorough evaluation of the proposed site is recommended prior to any placement or installation works are carried out.

ACCESS

It is wise to position your tank for ease of regular maintenance and inspection.

Do not lock in tank by other equipment or buildings in the case of having to cost effectively remove and or replace tank in the future. Use guards and physical restraints to prevent tank fittings and piping from impact damage and protect personnel from chemical leakage.

ABOVE GROUND

These tanks are specially designed for above ground use and can not be buried in any circumstances, due to excessive pressure causing the side wall to collapse. Below ground tanks are available;

Please contact your Polymaster consultant if you have this request.

WARNING

Failure to comply with these precautions and instructions can result in serious property damage, injury or death and reduce the tanks performance and longevity.

Transport & Storage

A. DO NOT TRANSPORT WITH LIQUID INSIDE

B. The Tank must be protected against mechanical damage during transport and storage.

C. Loading and off-loading must be carried out using only professional equipment, e.g. a forklift with extended forks. The covers, sockets or other protruding elements, which are not designed for lifting or moving the tank must not be used to lift or move the tank.

D. The Tank must never be pushed, pulled, dragged or rolled.

E. During transport and storage, if fitted, the door must be tightly closed and secured. If fitted, the dispensing nozzle must be placed in its holster and the control box shut.

F. Loading and transport areas must be smooth and free of sharp edges. During transportation, the tank must be secured to prevent the tank from moving.

G. The contents of the storage tank must be used within 12 months.

H. SIte delivery of the tank is to be conducted under the guidance of a Polymaster or nominated representative to ensure proper and safe handling of the tank to prevent dropping and/or damage to the tank.

NOTE:

THE TANK MUST NOT BE FILLED AT A RATE GREATER THAN 250 LITRES PER MINUTE (LPM).

For further advice, contact Polymaster Help on 1300 062 064

Installation & Handling

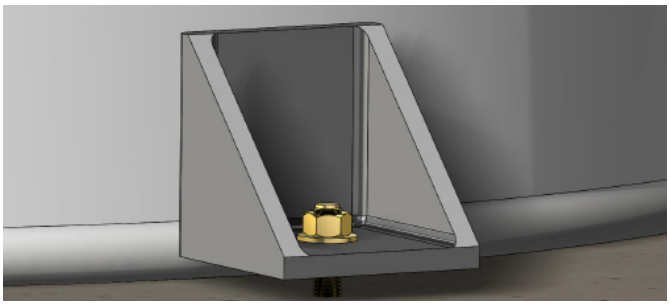
These instructions should be read in their entirety before commencing installation of the Industrial Tank.

> For all tank installation and maintenance, please take into consideration Health & Safety and Local Building Regulations.

> A solid minimum 45mm thick base or Plinth extending 300mm on all sides made from Concrete/bitumen. This plinth is to be Engineered by the use. If this is not possible the station must be installed directly on a level, secure and non-combustible base. Base material is to be maximum 5mm particle size E.g. “Crusher Dust”. Where a non-concrete/ bitumen base is used, Engineering of the restraint or tethering for local conditions is by the customer.

> Prior to installing, inspect for damage, if damaged do not install

> Determine if station needs to be secured in place. Do not drill holes in the tank.



The tanks must be adequately restrained to ensure stability whether full or empty. If hold down lugs have been specified this is only for tank positioning. These lugs are not designed to withstand massive forces. It is important also that the stainless steel M12 nuts, flat washers and chemical anchor studs (Installer to provide) are positioned in the centre of the 20mm diameter hole in each lug to allow expansion and contraction of tank, do not tighten the nut

Installation & Handling (cont.)

After installation, please ensure that this instruction booklet is left with the end user for future reference.

Ensure the entire base of the tank is supported with a non-combustible base (minimum 45mm in thickness) extending 300mm on all sides.

Custom design kits are available upon request.

This Polymaster Industrial Tank is warranted for 5 years from the date of purchase against faulty manufacture of the tank. The equipment and accessories are guaranteed for 1 year from purchase.

Provided that the following criteria are adhered to (applicable to all models):

- The enclosed warranty card is returned to Polymaster with evidence of the purchase date.
- The tank is installed and commissioned in accordance with the installation guide.
- The tank is installed and commissioned by a suitably qualified engineer.
- The tank has not been subject to misuse, careless handling, faulty installation, or any repairs have not been attempted or carried out other than by authorized, competent service staff.
- The tank has been purchased by the end user and is not for hire purposes.
- The tank has not been filled at a rate exceeding 250 litres per minute.
- The tank is installed above ground.
- The tank is inspected every 6 months or every 50,000 litres dispensed, depending on which occurs first, by a suitably qualified service engineer. Immediately upon discovery of any defect in the tank steps are taken to mitigate loss by contacting the Chemical supplier and if necessary arrange for tank to be drained pending the supply of a new tank.
- Immediately upon discovery of any defect you contact the Guarantor and allow a representative to inspect the tank and its surroundings and where necessary carry our any repairs (before any attempts are made to move the tank).
- The warranty card in this booklet should be returned to the supplier at 161 Karinie St, Swan Hill Vic. 3585 or industrial@polymaster.com.au
- The tank serial number must be recorded on the warranty card to validate warranty. This number is usually located on outside tank by the access hole.

The warranty excludes ancillary fittings such as contents measuring gauges or mechanical pumps. Further warranty information on ancillary fittings and pumps is provided within the manual.

Standard and ancillary fittings, repairs and maintenance are to be carried out by your local service agent. Polymaster Industrial does not offer service or repairs to this station.

PIPING AND VALVES

All hoses, piping and valves must be adequately supported independent of tank sidewall and roof. Flexible connections must be used when connecting to fittings installed on the tank, to ensure successful installation and tank warranty.

All fittings, valves, and piping should be shielded to prevent possible physical impact and protect personnel from chemical spray or leakage.

Installation & Handling (cont.)

WARNING

Failure to support and protect valves and piping and to provide engineered foundations for tank will void your warranty and could cause chemical release resulting in serious injury and or property damage.

GENERAL SAFETY PRECAUTIONS

Polymaster Industrial polyethylene tanks are heavy and require adequate equipment and properly trained personnel to unload and position the tanks. Do not stand or work on top of tank as the surfaces are slippery and flexible which could result in serious injury or death. If the tank needs to be entered ensure proper confined space procedures are adhered to and adequate ventilation equipment is provided.

TANK TESTING AND CHEMICAL COMPATIBILITY

It is strongly recommended that tanks are hydro tested for 24-48 hours before introduction of chemical. If applicable remove all water used for testing in case of possible reaction with chemicals stored.

Confirm compatibility of the tank and all associated fittings and gaskets with the chemical being stored. Label tank with appropriate chemical warning label and do not remove any Polymaster Warning Labels. Ensure tanks are adequately vented to prevent pressure or vacuum.

Filling & Dispensing

WARNING

Failure to follow below will result in tank damage and void the warranty.

- In case of liquid in the outer tank, always empty the outer tank first.
- If testing during commissioning, ensure that the outer tank level does not exceed the inner tank level.

FILLING CHEMICAL TANK

During the first fill of the tank the level indicator may show less volume than that filled. The level indicator minimum read point is placed at the base of the tank. The maximum level must NOT be exceeded.

A. Filling should be performed only under constant supervision of an authorized person.

B. This tank can only be filled by a tanker equipped with a camlock coupling.

C. Fill tank in normal manner. Do not overfill. Check level gauge during filling.

D. Disconnect delivery hose from coupling.

E. Promptly clean up any drips or spills.

Product Specification

CHEMICAL RESISTANCE

A chemical resistance chart may be found in our industrial catalogue or on our website www.polymaster.com.au and is also included in this installation guide. It is recommended that you discuss your specific chemical storage requirements with a Polymaster consultant or study the comprehensive chemical chart to ensure compatibility. A more comprehensive list is also available on request.

POLYETHYLENE MATERIAL

Polymaster uses a variety of medium and low density hexane based Polyethylene resin that have been specially designed for the rotational moulding process in the manufacturing of chemical and process tanks.

This advanced material exceeds all requirements of the Australian standard AS/NZS 4766 Polyethylene Storage Tanks for Water and Chemicals. Key features of the mechanical properties include: Excellent impact resistance, strength, environmental crack resistance. This new material also carries a high level of UV and antioxidant stabiliser designed for the harsh outdoor Australian environment, minimum of UV 12 rating.

TEMPERATURE & SG RATINGS

The temperature of the chemical / liquid stored has different effects on the Polyethylene and can produce different effects within the same chemical range. The chemical resistance chart shows this effect using a 21 degrees and a 60 degrees example. Contact a Polymaster consultant if you are unsure about your application. A continuous liquid temperature above 40 degrees Celsius is not recommended for these tanks. Standard tanks are designed for a Specific Gravity (SG) of 1.0 but upon request this can be increased to 1.5 or even 2.0 in some situations.

VENTING

These tanks cannot be pressurised and are designed to operate at atmospheric pressure. Proper venting stops pressure or vacuum developing as the tank is filled or emptied. The vent should always exceed the size of the largest fill or discharge. POA.

Check that the chemical you are using is able to be vented to atmosphere without prior treatment.

WARRANTY

All Industrial tanks come with a 5 year warranty. Ensure you read the detailed information on this carefully to see what you are covered for in your situation.

This is available from a Polymaster consultant or www.polymaster.com.au

Flexible Connections

Flexible connections are required on fittings installed on the tank to allow the tank to expand and contract and to protect the tank from pump vibrations.

1. INSTALL FLEXIBLE CONNECTION IN ACCORDANCE WITH THE SPECIFIC MANUFACTURER'S INSTALLATION GUIDELINES.

A. Flexible connections are not to be used for correcting piping misalignment. The flexible connection and mating flanges must be installed in a centred, aligned and mated position.
B. Attach only FULL FACE flanges to the flexible connection. They are not designed to attach directly to tank wall.
C. Ensure adequate clearance between bolt ends for full use of flexible connections.
D. Provide pipe support adjacent to the flexible connection.

FLEXIBLE CONNECTION MINIMUM SPECIFICATIONS:

i. Axial Compression ≥ 38mm
ii. Axial Extension ≥ 15mm
iii. Lateral Deflection ≥ 19mm
iv. Angular Deflection ≥ 14°

2. INSTALLATION OF FLEXIBLE HOSE CONNECTIONS:

A. Check flexible hose is compatible with chemical spray used and is of sufficient size
B. Support the flexible hose in such a manner that horizontal and vertical movement is not impeded.

It is the responsibility of the tank installer/ purchaser to install the appropriate flexible connections between the tank and pipework. Failure to comply with this will void Polymaster's 5 year warranty.

TANK WARRANTY

All fittings, including outlets and inlets on the tank must have a flexible joint connection between the tank and the plumbing or rigid pipework.

This is vital to absorb movement and stress, isolate pump vibration, accommodate pipe misalignment, and minimise surge pressures. It is the responsibility of the tank purchaser to install the appropriate flexible connections between the tank and the plumbing. This is important as the Polymaster warranty is only valid if the installation has appropriate flexible connections.

INDUSTRIAL FLEXIBLE CONNECTIONS

One option to consider for industrial applications with mild chemicals are the rubber flexible joints which are available from Polymaster Industrial. The unit has EPDM tube, which is good for hot and cold water service and mild chemicals. The fully moulded TS- single sphere or TT– double sphere design provides great flexibility, thus protecting mating flanges. The steel flanges easily rotate on the bellows, which makes it easier to line up the bolt holes during installation when mating flanges are out of line.

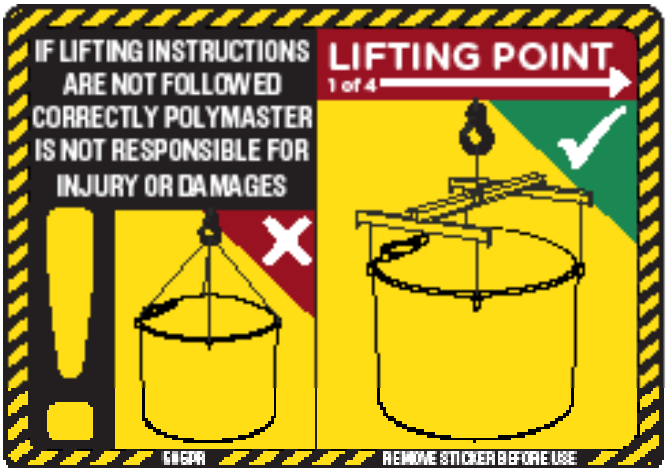
With a temperature rating of -20°C to 100°C, the standard sizes range from 25mm through 300mm I.D can have maximum working pressure of 2070 kPa (300 PSI),

Sizes 350mm through 600mm can have maximum working pressure of 1035 kPa (150 PSI)

Service & Maintenance

Regular routine visual inspections of your polyethylene tanks are important to ensure safety of personnel and preservation of stored chemical. Any sign of stress cracking, UV degradation and/or other signs of tank failure should be immediately reported and a full inspection carried out which would ultimately result in tank replacement.
Internal checks are also recommended at least annually or as often as is practical. This is because cracks will often show up on the inside surface before becoming obvious on the exterior.

A. Plan and initiate a maintenance regime for the tank system. Aim is to keep all system equipment in good working condition.
B. Spare parts must comply with the requirements of the manufacturer.
C. Carry out a daily visual check of the tank station and ancillaries. Any leaks to be promptly recorded, reported and repaired by a qualified and authorised person.
D. Any faults or alarms should be reported to the station manager immediately.
E. Protect against unauthorised access.
F. In the event of tank relocation, lift according to the Lifting Instructions shown in the diagram below. Tank must be empty. Do not damage the tank walls, base, roof, pipework and fittings.
G. Inspect for tank leaks regularly.



If liquid is detected by alarm or observed around the outer tank or in the interstitial space (space between inner and outer tanks), promptly record, report and arrange for corrective action. Corrective action will include emptying the leaking tank and interstitial space, locating the leak and if accessible, polyethylene welding the leak. Test for leaks by filling with potable water to the highest tank storage level and hold for 24 hours. Dispose of unwanted liquid according to local EPA guidelines.

H. Ensure that contamination not intended to be in the tank is prevented from entering at any time either by design or a managed maintenance regime.

If the stored liquid fumes and is allowed to escape outside the tank, ensure you check local EPA guidelines for compliance. Metal items and control panels that could be affected by the fumes must be protected from corrosion by using good engineering practice.

INTERNAL INSPECTION

Empty the tank and neutralise any chemical remaining. Where a confined space entry is possible, thoroughly clean the inside of the tank, a dirty tank will make inspection unsuccessful. Examine the tank surface for any cracking or surface degradation. Pay particular attention around fittings and the base in the radius where the floor meets the wall.

If a confined space entry is not possible. Clean inside as well as possible from the inspection cover and use a light to inspect the internals.

Service & Maintenance (cont.)

WARNING

Do not enter a tank without confined space entry training and relevant personnel and permits. Use adequate approved ventilation equipment when inspecting the internals of a tank as fumes and vapours may be present.

Use necessary fall protection equipment to prevent against accidental falls relating to entry method or slippery conditions. Failure to comply with these warnings could result in injury or death.

EXTERNAL INSPECTION

Thoroughly clean the outside of the tank and examine for any cracking or excessive surface degradation. Pay particular attention around all fittings,

level indication tubing, flexible couplings, connection hoses and gaskets for any leakage or signs of corrosion. Inspect the vents for “free flow” to ensure adequate entry for pressure and vacuum.
Check all pipe support brackets to make sure fittings, valves, piping etc., are adequately supported and protected.

SAFETY CONSIDERATIONS

Do not stand or work on top of tank. The tank surfaces are slippery and flexible and if any premature degradation has occurred the section could give way resulting in serious injury or death.
Before any entry to tank ensure confined space protocol is met which requires extra personnel, proper ventilation equipment and an adequate plan for rapid withdrawal.
Any Chemical residues that remain in tank could be fatal unless properly neutralised or completely removed.

Chemical Chart

This Chemical Resistance Chart is to be used as a guide to assist you in determining the suitability of LLDPE Hexathene® for storing the chemical indicated.

Chemical Storage is a critical application which requires the optimum processing of the part.

Many chemicals can attack, degrade and cause swelling in LLDPE. Other agents (e.g. detergents, alcohols, oils etc) may cause cracking of the LLDPE especially when the part is under stress.

The following key has been used in this table:

✓	Indicates satisfactory, negligible attack
–	Indicates some attack or absorption (may be considered where alternative materials are unsatisfactory)
✗	Indicates unsatisfactory, extensive attack (polyethylene should not be used for any applications where these chemicals are present)
?	Indicates possibility of tank 'stress cracking'

Note:

• Information provided by Polymaster Industrial with respect to chemical resistance is to be used as a guide for application and is not to be taken as a guarantee of ultimate field performance.

• Satisfactory chemical resistance does not necessarily imply freedom from environmental stress cracking or chemical oxidation.

• The ultimate serviceability of a chemical tank is subject to factors outside of the control of Polymaster Industrial. These factors include processing conditions, design, installation, operating conditions and environment which may all compromise the supplied product.

• This data is supplied in good faith and is not the result of evaluations conducted by Polymaster.

Chemical Chart 1

Chemical	Concentration (% by weight in aqueous solution)	Temperature 20°C	Temperature 60°C	Environmental cracking hazard
Acetaldehyde	100	–	✗	?
Acetic acid	10	✓	✓	
	60	✓	✓	✓
	Glacial	–	✗	✓
Acetone	100	✗	✗	?
Alcohol, amyl		✓		?
Alcohol, butyl		✓		?
Alcohol, cetyl		✓		?
Alcohol, ethyl	40	✓		
	100	✗		?
Alcohol, furfuryl		✗		?
Alcohol, methyl	6	✓		
	100	–		
Alum		✓	✓	
Aluminium chloride		✓	✓	
Aluminium fluoride		✓	✓	
Aluminium hydroxide		✓	✓	
Aluminium sulphate		✓	✓	
Ammonia	0.88 SG	✓	✓	
	Dry gas	✓		
Ammonium bicarbonate		✓	✓	
Ammonium carbonate		✓	✓	
Ammonium chloride		✓	✓	
Ammonium hydro sulphide		✓	✓	
Ammonium hydroxide		✓	✓	
Ammonium metaphosphate		✓	✓	
Ammonium nitrate		✓	✓	
Ammonium persulphate		✓	✓	
Ammonium phosphate		✓	✓	
Ammonium sulphate		✓	✓	
Ammonium sulphide		✓	✓	
Ammonium thiocyanate		✓	✓	
Amyl acetate		✗		?
Aniline		✗		
Aniline hydrochloride		✗		
Aniline sulphate		✗		
Animal oils		–	✗	?
Antimony pentachloride		✓	✓	
Antimony trichloride		✓	✓	
"Arcton"6		–		?
Barium carbonate		✓	✓	
Barium chloride		✓	✓	
Barium hydroxide		✓	✓	
Barium sulphate		✓	✓	

Chemical	Concentration (% by weight in aqueous solution)	Temperature 20°C	Temperature 60°C	Environmental cracking hazard
Barium sulphide		✓	✓	
Beer		✓	✓	
Benzaldehyde	100	✗		?
Benzene		✗		?
Benzene sulphonic acid		✗		
Benzyl alcohol		✗		
Bismuth carbonate		✓	✓	
Borax		✓	✓	
Boric acid		✓	✓	
Boron trifluoride		✓		
Brine		✓	✓	
Bromine	Dry gas	✗		
Calcium bisulphite		✓	✓	
Calcium carbonate		✓	✓	
Calcium chlorate		✓	✓	
Calcium chloride		✓	✓	
Calcium hydroxide		✓	✓	
Calcium hypochlorite		✓		
Calcium nitrate		✓		
Calcium phosphate		✓		
Calcium sulphate		✓		
Camphor oil		✗		?
Carbon dioxide		✓		
Carbon disulphide		✗		
Carbon monoxide		✓		
Carbon tetrachloride		✗		
Castor oil		✗		?
Chloral hydrate		✗		
Chlorine	Dry gas	–	✗	
	Liquid	✗		
Chlorine water	2	✓	✓	
	Sat. solution	✓	–	
Chloroform		✗		?
Chlorosulphonic acid		✗	✗	
Chrome alum		✓	✓	
Chromic acid	Plating solution	✓	✓	
Cider		✓		
Citric acid		✓	✓	
Copper cyanide		✓	✓	
Copper fluoride		✓	✓	
Copper nitrate		✓	✓	
Copper sulphate		✓	✓	
Creosote		✗		?

Chemical Chart 2

Chemical	Concentration (% by weight in aqueous solution)	Temperature 20°C	Temperature 60°C	Environmental cracking hazard
Cresols		✗		?
Cresylic acid (crude)		✗		
Cupric chloride		✓	✓	
Cupric nitrate		✓	✓	
Cupric sulphate		✓	✓	
Cyclohexanol		✗		
Cyclohexanone		✗		
Detergents, synthetic (Normal user conditions)		✓	✓	?
Developers, phosphate		✓	✓	
Dextrose		✓	✓	
Dibutyl phthalate		–	✗	?
Diethyl ether		✗	✗	?
Dioctyl phthalate		–	✗	?
Disodium photographic		✓		
Emulsifiers	All conc.	✓	✓	
Emulsions, photographic		✓		
Ether		✗		?
Ethyl acetate		–	✗	
Ethylene dichloride		✗		?
Ethylene glycol		✓		
Ferric chloride		✓		
Ferric sulphate		✓		
Ferrous ammonium citrate		✓	✓	
Ferrous sulphate		✓	✓	
Fixing solution, Photographic		✓	✓	
Fluorine		–	✗	
Fluosilicic acid		✓		
Formaldehyde	40	✓	✓	
Formic acid	3 10 25 50 100	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
Fruit pulp		✓		
Furfuryl alcohol		✗		?
Glucose		✓		
Glycerine		✓	✓	
Grape sugar		✓	✓	
Hydrobromic acid	50 100	✓ ✓	✓ ✓	
Hydrochloric acid	10 22 Conc.	✓ ✓ ✓	✓ ✓ ✓	

Chemical	Concentration (% by weight in aqueous solution)	Temperature 20°C	Temperature 60°C	Environmental cracking hazard
Hydrofluoric acid	4 40 50 Conc.	✓ ✓ ✓ ✓	✓ ✓ ✓ –	
Hydrogen		✓	✓	
Hydrogen peroxide	3 (10 vol.) 12 (40 vol.) 30 (100 vol.) 90 and above	✓ ✓ ✓ ✓		
Hydrogen sulphide		✓		
Hydroquinone		✓		
Hypochlorous acid		–	✗	
Lactic acid	10 100	✓ ✓	✓ ✓	
Lead acetate		✓		
Lead arsenate		✓		
Lead tetra-ethyl		✓		
Linseed oil		–	✗	?
Magnesium carbonate		✓	✓	
Magnesium chloride		✓	✓	
Magnesium hydroxide		✓	✓	
Magnesium nitrate		✓	✓	
Maleic acid	25 50 Conc.	✓ ✓ ✓	✓ ✓ ✓	
Magnesium sulphate		✓	✓	
Mercuric chloride		✓	✓	
Mercuric cyanide		✓	✓	
Mercury		✓		
Metallic soaps		✓		?
Methyl acetate		✗	✗	
Methyl bromide		–	✗	
Methyl chloride		✗	✗	
Methyl ethyl ketone		–	✗	?
Milk		✓		
Mineral oils		–	✗	?
Monochlor benzene		✗	✗	
Nickel chloride		✓	✓	
Nickel nitrate		✓	✓	
Nickel sulphate		✓	✓	
Nitric acid	5 10 25	✓ ✓ ✓	✓ ✓ ✓	Oxidising Agent

Chemical Chart 3

Chemical	Concentration (% by weight in aqueous solution)	Temperature 20°C	Temperature 60°C	Environmental cracking hazard
Nitric Acid	50 70 95	– – ✗	✗ ✗ ✗	Oxidising Agent
Nitrobenzene		–	✗	?
Oxalic acid		✓	✓	
Oxygen		✓		
Paraffin		–	✗	
Petrol		✗	✗	
Petroleum ether		✗	✗	
Phenol		✗		?
Phosphoric acid	25 30 50	✓ ✓ ✓	✓ ✓ ✓	
Phosphorus oxychloride		✗	✗	
Phosphorus pentoxide		✓	✓	
Phosphorus trichloride		✓		
Photographic developers		✓	✓	
Photographic emulsions		✓		
Photographic Fixing solutions		✓	✓	
Picric acid	1 10% w./ alcohol	✓ ✓		
Potassium bicarbonate		✓	✓	
Potassium bichromate		✓	✓	
Potassium bisulphate		✓	✓	
Potassium bisulphite		✓	✓	
Potassium borate		✓	✓	
Potassium bromate		✓	✓	
Potassium bromide		✓	✓	
Potassium carbonate		✓	✓	
Potassium chlorate		✓	✓	
Potassium chloride		✓	✓	
Potassium chromate		✓	✓	
Potassium cuprocyanide		✓	✓	
Potassium cyanide		✓	✓	
Potassium dichromate		✓	✓	
Potassium ferricyanide		✓	✓	
Potassium ferrocyanide		✓	✓	
Potassium fluoride		✓	✓	
Potassium hydroxide	1 10 Conc.	✓ ✓ ✓	✓ ✓ ✓	?
Potassium nitrate		✓	✓	
Potassium perborate		✓	✓	

Chemical	Concentration (% by weight in aqueous solution)	Temperature 20°C	Temperature 60°C	Environmental cracking hazard
Potassium permanganate		✓	✓	
Potassium persulphate		✓	✓	
Potassium phosphate		✓	✓	
Potassium sulphate		✓	✓	
Potassium sulphide		✓	✓	
Potassium thiosulphate		✓	✓	
Salicylic acid		✓	✓	
Sea water		✓	✓	
Silicone fluids		–		?
Silver cyanide		✓	✓	
Silver nitrate		✓	✓	
Soap solution		✓	✓	?
Sodium acetate		✓	✓	
Sodium aluminate		✓	✓	
Sodium benzoate		✓	✓	
Sodium bicarbonate		✓	✓	
Sodium bisulphate		✓	✓	
Sodium bisulphite		✓	✓	
Sodium borate		✓	✓	
Sodium bromide		✓	✓	
Sodium carbonate		✓	✓	
Sodium chlorate		✓	✓	
Sodium chloride		✓	✓	
Sodium cyanide		✓	✓	
Sodium ferricyanide		✓	✓	
Sodium ferrocyanide		✓	✓	
Sodium fluoride		✓	✓	
Sodium hydroxide	1 10 40	✓ ✓ ✓	✓ ✓ ✓	?
Sodium hyposulphates	Conc.	✓	✓	
Sodium hypochlorite	15% chlorine	✓	✓	Oxidising Agent
Sodium metaphosphate		✓	✓	
Sodium nitrate		✓	✓	
Sodium nitrite		✓	✓	
Sodium peroxide		✓	✓	
Sodium phosphate		✓	✓	
Sodium silicate		✓	✓	
Sodium sulphate		✓	✓	
Sodium sulphide		✓ ✓	✓ ✓	
Sodium sulphite		✓	✓	
Sodium thiosulphate		✓	✓	
Soft soap		✓	✓	?

Chemical Chart 4

Chemical	Concentration (% by weight in aqueous solution)	Temperature		Environ-mental cracking hazard
		20°C	60°C	
Stannic chloride		✓	✓	
Stannous chloride		✓	✓	
Starch		✓	✓	
Stearic acid		✓	✓	
Sucrose		✓	✓	
Sulphur	Colloidal	✓		
Sulphur dioxide	Dry gas Moist	✓ ✓		
Sulphuric acid	10 20 30 40 50 60 70 95 98 Fuming	✓ ✓ ✓ ✓ ✓ ✓ ✓ – – ✗	✓ ✓ ✓ ✓ ✓ ✓ – ✗ ✗ ✗	
Surface-active agents (Emulsifiers, synthetic detergents and wetting agents)	Normal dilutions	✓	✓	?
Tallow		✓		
Tannic acid		✓	✓	
Tanning extracts	10	✓	✓	
Tartaric acid		✓	✓	
Toluene		✗	✗	
Transformer oil		H	✗	?
Trichloroethylene		✗	✗	?
Tricresyl phosphate		✗	✗	?
Triethanolamine		–	✗	?
Trisodium phosphate		✓	✓	
Turpentine		–	✗	?
Vegetable Oils		–	✗	?
Vinegar		✓	✓	
Water		✓	✓	
Wetting agents	Normal dilutions	✓	✓	?
Whey		✓		
Wines and spirits		✓		?
Xylene		✗	✗	
Yeast		✓		
Zinc chloide		✓	✓	
Zinc Oxide		✓	✓	
Zinc sulphate		✓	✓	

Recommended Care Instructions

POLYMASTER SELF BUNDED CHEMICAL TANK – APRIL 2020

ITEM/AREA OF INTEREST	ACTION RECOMMENDED	FREQUENCY
Visual Inspection	Visually inspect the entire unit for any changes in condition.	3 Months
Cleaning	Clean the unit regularly with soapy water and a cloth to remove any buildup of dust/dirt/chemical spillage.	3 Months
Location	Confirm that the installation environment matches that of the original installation. Review changes for any influence to the safe use of the tank such as wind or distance to people and traffic.	As Used / 12 Months
Tank Condition	Temperature & SG Ratings of the Fluids. Review the fluids being stored in the tank and confirm that they match those intended for original tank use. Inspect abrasions or cuts on the tank. Assess tank for excessive weathering. Assess tank for any swelling, bulging or deformation of tank walls.	As Used / 3 Months
Chemical Degradation and Compatibility	Confirm the chemicals currently used are compliant with the original installation. Review any change with Polymaster and the Polymaster Chemical Compatibility Chart.	As Used / 12 Months
Valves	During normal operation check the action of the PVC-U ball valve handle.	As Used / 3 Months
Vent	Check and clean around the vent regularly to remove any buildup of dust/dirt. Check that there is nothing impeding the operation of the vent.	3 Months
Seals	When the unit is completely empty, undo and remove the PVC-U ball valves. Check the condition of the seals within the ball valve. Replace if the seals have deteriorated.	12 months
Bund Alarms	Check that the alarms activate when tested. Replace batteries in alarm boxes as necessary.	As Used / 3 Months
Gaskets	Visually inspect the condition of the flanges and connected fitting regularly for any changes or leaks. If any change is noted, completely drain the tank until empty then inspect and service the unit and replace gaskets as needed.	As Used / 3 Months

Recommended Care Instructions

ITEM/AREA OF INTEREST	ACTION RECOMMENDED	FREQUENCY
Screw Lids	Check that the screw lids (internal and external) are still tightly secured.	As Used/12 months.
Weld on Fittings	Investigate any degradation of weld and/or excessive stress marks. Check for any leakage or surface cracks developing. Check fitting distortion including vertical/horizontal alignment.	As Used/12 months
Flexible Connections	Check positioning and alignment of flexible connections. Assess compatibility of connector to users systems. Review for excessive axial or lateral compression.	As Used / 3 Months
Electrical / Sensors	Visually inspect the condition of the power box and associated components. Clean the power box with a damp cloth to remove any buildup of dust/ dirt/chemical spillage. Part Code: PB240V-CHEM	3 Months
Foundation/Base	Check the condition of the tank foundation for any erosion, cracking or subsidence. Repair as required. Ensure any repair materials meet the Installation Guide requirements.	3 Months
Moving	ONLY MOVE UNIT WHEN COMPLETELY EMPTY.	
Tank Restraints	Review all restraints, tie down lugs and associated fasteners to ensure they are secure, meet “As-Installed” condition and performance and are in good condition.	As Used / 3 Months

Troubleshooting

TOPIC	POSSIBLE CAUSE	ACTION	CONTACT
Bund alarm activated	Over filling	Check high level alarm. Shut off filling pump before high level reached.	Contact Polymaster
	Leaking internal tank	Review tank location for any impact or damage. Review fittings.	Contact Polymaster
	Faulty bund alarm or alarm sensor	Check sensor/alarm operation. Check and replace batteries.	Contact Polymaster
	Water Ingress	Check for damage to any vents or connected pipework.	Contact Polymaster
	Hoses or fill line issue	Check all hoses (fill lines) are connected and haven't come off.	Contact Polymaster
High level alarm	Overfill	Dispense product until below alarm level. Review fill procedures. Review level sensor operation.	Contact Polymaster
	Faulty alarm or parameters	Check parameters on controller, if correct contact supplier.	Contact Polymaster
	Faulting bund alarm or Parameters	Check cable connections. Check bund sensor is located at low level in bund.	Contact Polymaster
Low level alarm	Faulty alarm parameters / low product level	Check tank levels, if enough product in the tank, check the alarm parameters on controller. If levels are low order more product.	Not required
Cabinet door not shutting	Tank not level on base	Re-level base so cabinet door will shut.	Not required
Water present in product when dispensed	Water ingress to internal tank	Check the man hole cover is fitted correctly and sealed.	Contact Polymaster

Warranty Card

Please send this back to Polymaster Pty Ltd within 30 days of installation to confirm acceptance of terms in the warranty and we will formally register your warranty for you. This does not affect your statutory rights.

Failure to do this will make all warranty's invalid.

Postal address: Locked bag 4001, Swan Hill VIC 3585

Email: **aftersales@polymaster.com.au**

Serial number of Chemical tank : _____
(located around lid area or rib)

Chemical tank capacity (Ltr) : _____

My use is: ☐ Industrial ☐ Commercial ☐ Agricultural
(please tick appropriate)

Name: _____

Address: _____

Postcode: _____ Telephone: _____

Email Address: _____

Customer Signature: _____

Date of Purchase: _____

(Please ensure all fields are completed to ensure validity. Once we receive this information, we will process and send you confirmation of activation)

Warranty

This warranty is not valid for the following defects:

- Mechanical damage caused by the user, dealer or improper maintenance.
- Faults, damage or premature wear caused by improper use.
- Damage caused by third parties.
- Repairs carried out by unauthorized service personnel.

Within the warranty period, Polymaster will repair or replace, at their discretion, any tank found faulty due to incorrect material or workmanship.

Polymaster products are warranted against material or manufacturing defect and have the following warranty period commencing from the date of the invoice:

For polyethylene tanks: 5 years
For accessories/components: 12 months

Notes:

Polymaster

Together we
hold the future.

→ 1300 062 064
→ polymaster.com.au/enginereed-solutions
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