Hydrogen Peroxide Horizontal Storage Tank

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Technical Data Sheet

Introduction

Solvay Chemicals, Inc. has designed a hydrogen peroxide storage tank that is relatively easy to transport, install, and assemble. This tank is available in capacities of 7000, 10000, and 13000 gallons to meet different storage requirements. The tank is skid mounted so that no special foundation is required, but it should be located on a level surface, placed inside a dike to contain any spills, and have a safety shower and water hose nearby. All other metal parts contacting hydrogen peroxide should be passivated prior to being placed in service.

Installation

The tank must be lifted only when it is empty. Nylon straps are preferred for lifting, however, cables can be used. Either nylon straps or cables must be sized to handle a minimum of 150% of the weight of the tank (refer to Process Engineering Diagram T-1 for weight and dimension information).

If nylon straps are used, place on the outside of the saddles and inside of the bottom nozzles. If cables are used, place boards between the cables and the tank (to protect the tank) before connecting the cables to the saddles. Refer to the decal on the tank for the recommended rigging method.

Assembly

There are a few steps required to prepare this tank for safe hydrogen peroxide service. A fill line with brace, and a wooden crate containing the accessories are shipped with the tank. Refer to Process Engineering Diagram T-1 for nozzle locations.

1. Manway - Remove the tie-down from the manway (but leave it closed) so that it can act as an emergency relief vent in case of rapid decomposition. Never tie down the manway when the tank is in H_2O_2 service.
2. Vent Filter - Remove the 6" blind flange from one of the nozzles on top of the tank and install the filter.
3. Remove a 2” blind flange from the top of the tank for the fill line. Position it so that it is conveniently located for deliveries. Use the accompanying brace to support the fill line.
4. Sight Glass - Remove the two ¾" blind flanges from the nozzles on the side of the tank and install the ¾" valve to the bottom nozzle. Install the sight glass, taking care to distribute the stress evenly on both flanges. Install the ¼" drain valve on the bottom of the sight glass. Close all valves.
5. Outlet Valve - Remove the 2" blind flange from the nozzle on the bottom of the tank and install the outlet valve assembly. Close the outlet valve.
6. Miscellaneous - Uncover the tank label and safety poster on the tank. Leave the other blind flanges in place to prevent contamination of the interior of the tank. Store the blind flanges that were removed in the crate for reuse when returning the crate.

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Disassembly

The tank must be prepared for safe transport and to comply with DOT regulations.

1. The tank must be completely emptied of hydrogen peroxide and then a minimum of 100 gallons of water (the highest quality available) added. The flanges on all bottom nozzles should be removed to drain any heel. Persons working with hydrogen peroxide should be familiar with safety and handling procedures and should always wear the appropriate personal protective equipment including goggles and gloves.
2. The tank must be disassembled (reverse the steps used in assembly) and all of the accessories packaged in plastic and replaced in the original wooden crate.
3. Cover the words "Hydrogen Peroxide" wherever they are located on the storage tank (tank label, safety posters, etc.).

Recommended Maintenance

1. The vent filter should be inspected periodically for particular buildup and replaced as needed.
2. The sight glass tubing should be inspected for leaks each time it is used and repaired as needed.
3. Any damaged gaskets must be replaced.

Pre-Transport Checklist

The following checklist is recommended to assist in complying with the DOT regulations. It should be faxed to Solvay Chemicals at 713 307 3807 when the tank is ready for return.

Date: _____ Location: _____

Customer: _____ Operator: _____

Emptied _____

Rinsed _____

Drained _____

Labels Covered _____

Manway Tied Down _____

Vent Filter Removed and Blind Installed _____

Sight Glass Removed and Blinds Installed _____

Outlet Assembly Removed and Blind Installed _____

Accessories Crated _____

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Tank Calibration Chart

Depth	Volume (gallons)			Depth	Volume (gallons)			Depth	Volume (gallons)		
(in)	7000	10000	13000	(in)	7000	10000	13000	(in)	7000	10000	13000
1	9	14	18	36	2052	3020	3711	71	5019	7327	8976
2	27	41	51	37	2133	3138	3856	72	5100	7445	9119
3	49	75	94	38	2215	3257	4001	73	5180	7561	9262
4	76	116	145	39	2298	3377	4148	74	5259	7677	9404
5	107	163	202	40	2381	3498	4295	75	5338	7791	9544
6	142	214	266	41	2464	3619	4444	76	5416	7905	9683
7	179	270	335	42	2548	3741	4593	77	5493	8017	9820
8	219	330	409	43	2633	3863	4743	78	5569	8128	9956
9	262	394	488	44	2717	3986	4893	79	5644	8238	10090
10	307	461	571	45	2802	4110	5044	80	5718	8346	10223
11	355	532	659	46	2888	4234	5195	81	5791	8453	10354
12	405	606	750	47	2974	4358	5347	82	5863	8558	10843
13	456	683	845	48	3060	4483	5500	83	5934	8662	10610
14	510	763	943	49	3146	4608	5652	84	6004	8764	10735
15	566	845	1044	50	3232	4733	5805	85	6072	8864	10858
16	624	930	1149	51	3318	4859	5959	86	6139	8963	10979
17	683	1018	1257	52	3405	4984	6112	87	6205	9059	11098
18	744	1107	1367	53	3492	5110	6265	88	6269	9154	11241
19	806	1199	1480	54	3578	5235	6419	89	6332	9246	11328
20	870	1293	1595	55	3665	5361	6572	90	6393	9337	11439
21	936	1389	1713	56	3751	5486	6726	91	6453	9425	11547
22	1002	1487	1834	57	3838	5612	6879	92	6511	9510	11652
23	1071	1587	1956	58	3924	5737	7032	93	6567	9593	11755
24	1140	1689	2081	59	4010	5862	7185	94	6622	9674	11854
25	1210	1792	2208	60	4096	5987	7337	95	6674	9751	11949
26	1282	1897	2336	61	4182	6111	7489	96	6724	9826	12041
27	1355	2004	2467	62	4268	6235	7641	97	6773	9898	12130
28	1429	2111	2599	63	4353	6359	7792	98	6818	9966	12214
29	1504	2221	2733	64	4438	6482	7943	99	6862	10031	12294
30	1580	2331	2868	65	4522	6605	8092	100	6903	10092	12369
31	1656	2443	3005	66	4606	6727	8242	101	6941	10149	12440
32	1734	2556	3144	67	4690	6848	8390	102	6976	10201	12505
33	1812	2671	3284	68	4773	6969	8538	103	7008	10249	12564
34	1891	2786	3425	69	4856	7089	8685	104	7036	10291	12617
35	1971	2902	3567	70	4938	7209	8831	105	7059	10328	12662

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Storage and Handling

- Store hydrogen peroxide in the original vented container, upright, in a cool, ventilated area where it is protected from damage, or in bulk storage tanks made from approved alloys of aluminum or stainless steel.
- Do not store other chemicals, fuels, or combustible materials near hydrogen peroxide.
- Never return unused hydrogen peroxide to the storage container.
- When empty, rinse all peroxide containers thoroughly with clean water before discarding.
- Use only approved material for pumps, piping, and hoses.

Safety

- Persons working with hydrogen peroxide should be familiar with personal protective equipment, first aid measures and the proper safety and handling procedures. Consult the Material Safety Data Sheet (MSDS) for appropriate information.
- Prevent accidental decomposition by keeping the product free of contaminants.
- Prevent fires by avoiding accidental spills. Water is the preferred method for extinguishing fires in which hydrogen peroxide is present.
- Spills and leaks should be contained, diluted with copious amounts of water and disposed of in compliance with local regulations.
- Hydrogen peroxide storage or handling areas should be equipped with a safety shower, an eyewash station, and a water hose.

First Aid

In case of product splashing into the eyes and face, treat eyes first.

- **Eye contact:** Flush eyes immediately with water for at least 15 minutes. Call a physician.
- **Skin contact:** Immediately flush skin with water while removing contaminated clothing and shoes. Call a physician if irritation persists.
- **Inhalation:** Remove the victim from the contaminated area to fresh air. Call a physician in case of respiratory symptoms.
- **Ingestion:** Consult with a physician immediately in all cases. DO NOT induce vomiting. If victim is conscious, rinse mouth and give fresh water.

Danger: Hydrogen Peroxide solutions are strong oxidizers and corrosive to the eyes, mucous membranes and skin. Consult the MSDS for the appropriate Personal Protective Equipment to wear when handling hydrogen peroxide. In case of contact with the eyes, skin or clothing, flush with large amounts of water for 15 minutes. In case of ingestion, sit upright, drink large quantities of water to dilute the stomach contents and seek immediate medical attention. Product in contact with combustible materials may cause fires.

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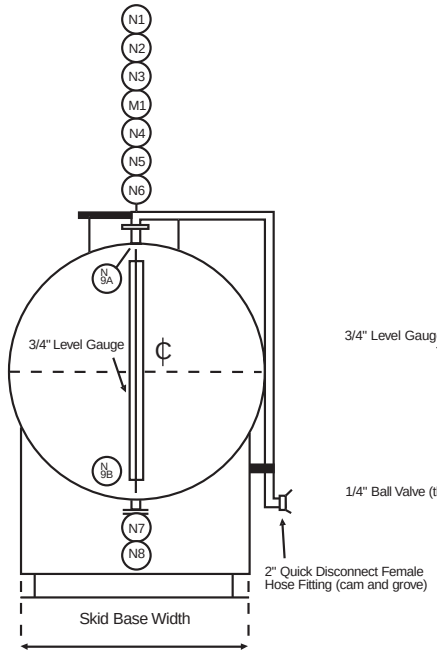
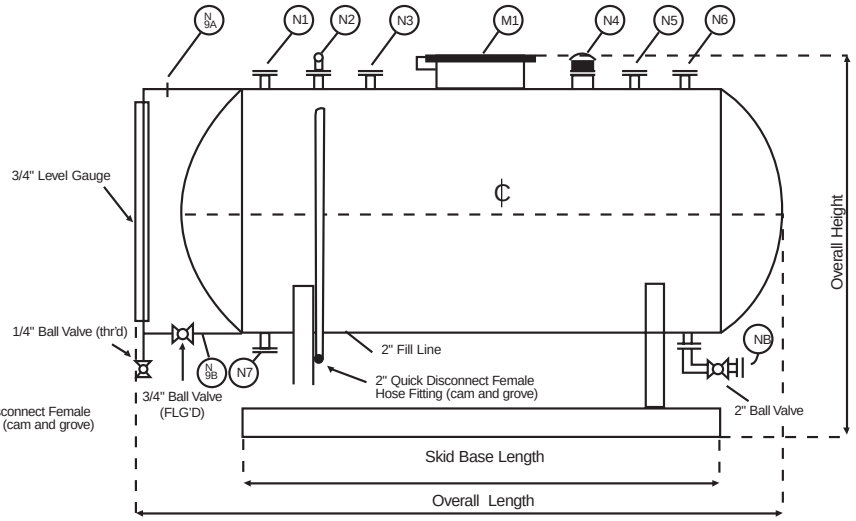
7,000 gal. through 13,000 gal.



End View



Elevation

Nozzle Schedule

MK	Size	# Req'd	Description
N1	3"	1	Spare
N2	2"	1	Fill Line
N3	2"	1	Vent Filter
N5	2"	1	Spare
N6	2"	1	Degassing Line Return
N7	3"	1	Spare
N8	2"	1	Outlet to Application
N9 A&B	3/4"	1	Level Gauge
M1	36"	1	Manway

Capacity	Capacity	OAL	OAH	SBL	SBW	Diameter	Material	Weight Empty-AL	Weight Empty-SS
7,000 gal.	7,400 gal.	18' - 3 5/8"	11' - 0"	13' - 0"	7' - 10 1/2"	8' - 6" OD	Shell - 304L SS	—	8,100 lbs.
7,000 gal.	7,000 gal.	16' - 3 7/8"	11' - 6"	12' - 0"	7' - 10 1/2"	9' - 0" OD	Shell - 5254 AL	5,500 lbs.	9,900 lbs.
10,000 gal.	10,300 gal.	23' - 3 7/8"	11' - 6"	17' - 0"	7' - 10 1/2"	9' - 0" OD	or 304L SS	6,800 lbs.	12,600 lbs.
13,000 gal.	12,700 gal.	28' - 3 7/8"	11' - 6"	21' - 0"	7' - 10 1/2"	9' - 0" OD	Skid - CS	8,400 lbs.	14,600 lbs.

Process Engineering Diagram T-1

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Before using, read Material Safety Data Sheet (MSDS) for this chemical.
Solvay Chemicals, Inc.
24 hour Emergency Phone Number - 1-800-424-9300 (CHEMTREC®)

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