



Guidelines for Chlorine Consumers for Handling Chlorine DO'S & DON'TS

S. No.	DO'S	DON'TS
1.	Always unload Tonners / Cylinders with the help of an Electric Hoist or a Chain Pulley Block. The unloading process should be handled by a trained operator.	While unloading Tonners / Cylinders from Truck, do not drop them to the ground directly or / on any cushioning media.
2.	For unloading small Chlorine Cylinders always use an adequate type of Cradle.	Do not use valve hood as support for unloading small Cylinders.
3.	For in-plant transportation use a suitable trolley.	Do not roll tonners for a longer distance.
4.	Store them under cool and well-ventilated shed, away from any type of heat source such as open flames, steam pipes, etc.	Do not expose Tonners / Cylinders to direct Sun or any other potential source of Heat.
5.	Store Tonners / Cylinders on a clean and dry impervious platform.	Do not store Tonners / Cylinders together with Acids, Corrosives or Inflammable materials.
6.	Store Tonners / Cylinders in a safe place where no objects are likely to fall upon. This may cause dent or cut on the container to the extent of rejection or may lead to leakage.	Never store material over the storage area of Tonners / Cylinders.
7.	i. Store filled Tonners in a Single row on their Sides. ii. Store baby cylinders in upright position.	Tampering like cutting, welding, hammering, etc. on any Tonners / Cylinders is not allowed.
8.	The Tonners / Cylinders should be used on "First Come First Used" basis within 3 months.	Do not keep filled Tonners / Cylinders for a long period.



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9.	Use Standard key for valve operation. Preferably forged steel and key length should be around 150 mm.	Do not use higher length valve keys to avoid excess torque and do not use excessive force for opening & closing the Container valve. It may lead to valve damage, and it is dangerous also.
10.	Always make connections with the help of standard <u>clamp</u> & provide connections gently.	Do not overtighten adopters, it may damage valve mouth of the container. Do not use damaged adopters and used gaskets.
11.	Put a Barometer Leg (10 meters or more) between Tonners/ Cylinders and process vessel for safe use of Chlorine and to avoid back flow.	Do not allow back sucking of process liquid into Tonners / Cylinders as it is highly dangerous if reaction takes place.
12.	You may use manifold of two or more Tonners / Cylinders to meet your process requirement and it can be increased if needed.	Never heat the container with hot water, steam or with direct flame to withdraw chlorine at a faster rate.
13.	Keep wooden tapered wedges between Tonners to prevent the lateral rolling during Transportation. Filled Tonners should not collide with each other during transportation.	A filled Tonner should not get any Mechanical Shock. Do not keep cylinders side by side without partition.
14.	Tonners / Cylinders should be adequately secured to prevent them falling off the truck. All 4 sides of the truck should be secured.	No part of Tonner should project outside the Truck Body. Do not keep second row for loaded Tonners.
15.	Load Tonners in horizontal position & baby cylinders in vertical position only.	Do not load empty Tonners / Cylinders in the Truck, casually.

	Care should be taken for handling of empty tonners as they may have last traces of chlorine gas sometimes.	While returning empty tonners/cylinders, ensure they are empty and no chlorine traces.
16.	Handling of chlorine should be done by skilled person.	Leakage should not be attended by unskilled person.
17.	Always wear suitable PPE's while handling Chlorine.	Never try to attend chlorine leakage without using SCBA sets / Canister masks.
18.	Call / Inform to the Supplier / Owner of the Tonners / Cylinders in case of inconvenience.	Never try to draw chlorine by making a bypass arrangement.
19.	Before filling, ensure that the date of the chlorine tonner /cylinder hydrotest is valid.	Do not breathe chlorine gas, fumes, vapor, or spray.
20.	Ensure the availability of safety shower and eye wash fountain in chlorine storage and handling area.	Do not use or store chlorine tonners or cylinders in wet and muddy area.
21.	Store the Chlorine Tonners / Cylinders in a well-ventilated and covered shed. Display SOP at Chlorine handling area.	Do not eat, drink, or smoke when handling Chlorine gas.
22.	Display the Safety Data Sheet (SDS) in the shed near the chlorine container.	Do not allow trucks with leaky tonners or cylinders in the factory premises.
23.	Keep an accessible space between chlorine tonners or cylinders.	Do not transport tonners or cylinders without protective caps.
24.	Use appropriate tools for handling chlorine tonners or cylinders.	Do not leave the work site while chlorine filling or injection to process is being done.
25.	Wear splash resistant safety goggles with a face shield, and PVC suit with hand gloves	Do not store chlorine Tonners / Cylinders along with incompatibles like hydrogen, sawdust,

	while connecting or disconnecting the chlorine cylinders or tonners.	phosphorous, turpentine or with any other flammables.
26.	Check for leaks before commissioning or prior to taking into service.	Do not stack chlorine cylinders or tonners on top of each other.
27.	Inspect the condition of piping paint and check the temperature, it will help to detect back flow of water due to failure of check valves.	Do not use oil or lubricant on cylinder or tonner valves.
28.	Use chlorine canister when removing, securing, connecting cylinders or tonners and when checking for leaks.	Do not leave operational cylinders without a hood.
29.	Use breathing apparatus in the event of an emergency chlorine leak.	Do not use a chlorine cylinder valve to regulate the flow.
30.	Post the chlorine emergency procedure in a prominent place.	Never lift the cylinder with its valve protection cover or safety cap.
31.	Store filled and empty Tonners / Cylinders separately and in single layer to make them accessible to attend in case of emergency.	Do not store the tonners in multilayer.
32.	Keep away from clothing and other combustible materials.	Do not spray water on leaking cylinders or immerse them in water to control the leak.
33.	Train and provide necessary protection to the personnel for the handling of chlorine.	Do not allow untrained persons to handle Chlorine.
34.	Regularly monitor the condition including surface temperature of chlorine tonners, cylinders and fittings for leaks or conditions for corrosion or damage, right from filling till	

	dispatch. The filled containers should be observed at least 24 hours before dispatch for any leak or temperature rise.	
35.	Regularly calibrate and monitor chlorine detectors.	
36.	Stay upwind direction while loading or unloading of Tonners / Cylinders.	
37.	In case chlorine leaks from bottom of the container, turn the container to bring leak position upside to for leak to be in vapour phase and minimize the leak in liquid form.	Do not connect at bottom for withdrawal of gas from Tonners.
38.	In case of Valve leak, the tonner should be rolled to bring the leaked valves on top.	
39.	Try to stop the leak by using chlorine kit if safe to do so and wash the small spill with large quantity of water thoroughly after handling the leakage.	
40.	Ensure the availability and healthiness of airline mask or self-contained breathing apparatus (SCBA), emergency handling kit and neutralizing pit.	
41.	Sodium hydroxide is preferred for neutralization purposes. Ensure enough is available.	



42.	Store Chlorine Tonners / Cylinders with single layer in series	Do not keep 2 nd / 3 rd row over the Tonners.
43.	All the Chlorine handling equipment should be tested periodically as per schedule for good working conditions.	Do not use untested equipment like tools, emergency tools, slings, wire ropes, etc. May be tested & certified by the Authorized TPA.