

Liquid salt storage guidance and regulations

Key definitions

Aboveground storage tank (AST) – Tanks that are above-ground that contain liquid substances. Product types in the tanks can range from food-based to petroleum to hazardous materials.

Other regulated substances – Tanks storing products that have the potential to pollute the waters of the state but are not hazardous materials or petroleum. Chloride containing liquid deicers falls into this category.

Class 2 Surface Water – Includes all Minnesota waters that are or may be used for fishing, fish culture, bathing, or any other recreational purpose and where it may be necessary to protect water or plant life as well as the public health, safety, or welfare.

Small tank – Tanks greater than 500 gallons in capacity, and less than or equal to 1,100 gallons in capacity and are within 500 feet of a Class 2 Surface Water.

Temporary tank – Tanks that store product for longer than 30 days but less than one year.

About aboveground storage tank systems

There are more than 20,000 regulated aboveground storage tanks (ASTs) currently in use across Minnesota.

When properly designed and operated, ASTs are very safe. However, ASTs and their associated piping are subject to construction flaws, corrosion, stress, cracking, weld and valve failures, overfills, spills during transfers, and occasionally tank rupture.

When ASTs leak or spill, the stored substances may flow into lakes and rivers, migrate through the soil to the water table, thereby contaminating soil, groundwater, or surface water and creating hazards to aquatic life and human health.

ASTs which store liquid substances that may pollute the waters of the state are regulated by Minn. R. ch. 7151, if site capacity is less than one million gallons. Larger facilities (facilities with a capacity of one million gallons or more) are regulated by permits negotiated with Minnesota Pollution Control Agency (MPCA). The goal of regulating ASTs is to prevent spills and leaks by providing storage tank owners with various safeguard options. These options include safeguards such as: secondary containment to minimize the impact of a release, corrosion protection and overfill prevention to prevent releases, and tank monitoring for leak detection. The level of protection needed depends on the type of product stored, the size of the tank, and the date that the tank was installed.



Liquid deicer storage tanks

Liquid deicer storage guidance

The general requirements for ASTs with less than one-million-gallon capacity include: registration with the MPCA, properly labeled tanks, secondary containment, a sign at the facility, and tank construction using appropriate industry standards. However, liquid deicing materials are considered other regulated substances and are not subject to the same regulations as hazardous materials because they have limited risk. The MPCA does not require the registration of other regulated substance ASTs.

The basic requirements for most liquid deicer storage therefor includes labeling all tanks, having a posted sign on site, and secondary containment. However, the size and location of ASTs containing deicer will influence the specific regulations that are required. Here is a summary of requirements that may apply to deicer storage tanks:

1. **Labeling ASTs containing deicer:** All tanks must be clearly labeled indicating the type of substance stored and the tank's capacity. If there is more than one tank, each tank must be labeled with a unique tank number.
2. **Sign posting:** If a person is not on site 24 hours a day, a sign must be posted with the name, address, and telephone number of the facility owner or operator, or a local emergency response contact. The sign must be posted so that it can be seen outside any containment area.
3. **Secondary containment:** Other regulated substance ASTs need 100 percent containment area volume of the largest tank in the containment area. An additional 10 percent capacity is required for ASTs exposed to precipitation. Double-walled tanks satisfy the secondary containment requirement. Here are other approved materials that can be used for secondary containment:
 - Compacted clay (12 inches thick with a permeability of 1×10^{-7} cm./sec. and has a cover material to prevent drying and erosion) that is designed and certified by a registered professional engineer
 - Concrete
 - Synthetic membrane
 - Geosynthetic clay liner
 - The lower bottom of a double-bottomed tank
 - Fabricated steel
 - Fiberglass

Exemptions

Some types of ASTs are exempt from the regulations, here are a few examples that may apply to deicer storage:

- ASTs with a capacity of 500 gallons or less
- ASTs with a capacity of 1,100 gallons or less that are not located within 500 feet of Class 2 Surface Water
- Indoor tanks
- A vehicle like a tank truck or a railroad car designed to transport substances from one location to another unless it remains in the same location more than 30 days

Indoor deicer storage

Tanks that meet the definition of an indoor tank are exempt from Minn. R. ch. 7151. An indoor tank is an AST located inside a building or other type of enclosed structure, resting on or elevated above an impermeable floor surface, which can contain a release of the entire contents of the tank in at least **one** of the following ways:

- The release would be entirely contained within a specific secondary containment structure (which may include a double-walled tank).

- The release would be contained by the building and would not escape through any doorways, floor drains, or other means, due to the location of the tank.
- The release would be directed by any drainage system of the building to a permitted, on-site wastewater treatment facility or to a permitted, municipal wastewater treatment facility.

Still have questions?

For more details visit the MPCA AST Program website:

www.pca.state.mn.us/business-with-us/aboveground-storage-tanks

For questions about AST requirements, call the MPCA at 651-296-6300 or 800-657-3864.

Additional AST fact sheets

Other Regulated Substances: <https://www.pca.state.mn.us/sites/default/files/t-a2-07.pdf>

Indoor Storage: <https://www.pca.state.mn.us/sites/default/files/t-a2-03.pdf>

Temporary Storage: <https://www.pca.state.mn.us/sites/default/files/t-a2-06.pdf>

Small Tanks Requirements: <https://www.pca.state.mn.us/sites/default/files/t-a2-04.pdf>

Secondary Containment: <https://www.pca.state.mn.us/sites/default/files/t-a4-01.pdf>

General Requirements: <https://www.pca.state.mn.us/sites/default/files/t-a1-02.pdf>

Become a certified Smart Salter by attending an MPCA Smart Salting certification training:

www.pca.state.mn.us/business-with-us/smart-salting-training

For questions about the Smart Salting program, email us at smartsalting.pca@state.mn.us.

