

Enversa™ Herbicide

Supplement to Bulk Storage and Handling Guide

This product-specific information supplements the Corteva Agriscience™ “Bulk Storage and Handling Guide”. Use these documents together to understand the requirements for a bulk storage facility of this product. To obtain additional copies of this Bulk Storage & Handling Guide, or this product-specific Supplement, see <https://BulkHandlingGuides.corteva.us> or contact your Corteva Territory Manager or Sales Representative.

General Storage Comments

- Enversa™ is a CS formulation which has excellent handling properties. If this is the first time Enversa has been added into the bulk tank which was previously used for a different product, it is critical that the tank be cleaned thoroughly prior to the addition of Enversa using the protocol on page 3 of this document.
- After each delivery and prior to first in-season use, the product should be recirculated long enough to provide a minimum of 3 tank turns in the bulk tank. In addition, when held in a bulk tank during the use season, recirculate the product every 60 days. Recirculation should be long enough to provide a minimum of 3 tank turns in the bulk tank. For example: 10,000 gallons of product stored in a tank with a recirculation pump with a capacity of 100 gallons/minute (~6,000 gallons/hour), would require roughly 5 hours of recirculation.
- The use of jet mixers within the tank are also highly recommended to increase the mixing capabilities of the recirculation system. Avoid air entrapment into the product as this can cause difficulties in handling.
- If using a filter assembly while recirculating the product or pumping it off to intermediate bulk containers (IBC) or totes, use a filter screen that is 12 mesh or coarser.
- Bulk stored products (tanks and totes) may freeze in winter (depending on the storage location and ambient temperature in the region), however, freezing will not hurt the product. When freezing, Enversa has shown little to no expansion properties, however, it is a best practice to allow some head space in bulk tanks to allow for expansion and contraction.
- Once the product thaws post winter storage, mixing is required to obtain a homogenous product just prior to the use season. Prior to mixing the tank for the first time after freezing, make sure there are no visible ice crystals in the product, otherwise pump damage may occur.

Product Density vs. Temperature

| | | | | | | | | |
|---------------------|-----------|---------|--------|---------|-----------|---------|---------|---------|
| Temperature °F (°C) | 27 (-2.8) | 30 (-1) | 40 (4) | 50 (10) | 60 (15.5) | 70 (21) | 80 (27) | 90 (32) |
| Density (lb/gal) | 9.15 | 9.14 | 9.12 | 9.10 | 9.07 | 9.05 | 9.02 | 8.99 |

Flash Point, NFPA Rating, Storage Temperature, and Signal Word

| Flash Point ¹ °F (°C) | NFPA 704 Diamond Ratings | | | Min. Storage Temperature °F (°C) | EPA Signal Word |
|-------------------------------------|--------------------------|--------------|------------|-------------------------------------|-----------------|
| | Health | Flammability | Reactivity | | |
| >208.4 °F (98 °C) | 1 | 1 | 0 | None (Product can freeze) | Caution |

| Material / Product Compatibility | Rating | Comment |
|------------------------------------|---------|--|
| Stainless Steel (304L, 316L) | OK | Required for bulk tanks |
| Aluminum (5052, 6061) | OK | Mildly corrosive (however, within acceptable limit) |
| Carbon Steel, Copper, Brass | NO | Moderately corrosive to corrosive |
| Silicone, Santoprene, Teflon, HDPE | OK | Recommended for gaskets and seals; including hose lining |
| EPDM, Viton | CAUTION | Acceptable for short-term use, need to be monitored for any signs of failure |

¹ The flash point of a liquid is the minimum temperature at which it gives off sufficient vapor to form an ignitable mixture with the air near the surface of the liquid or within the test vessel used.

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| Buna N, Neoprene, SBR | NO | Will likely absorb product and lose strength. Swelling or disintegration possible |
| LDPE, Acetal, UHMW, Polypropylene | CAUTION | Acceptable for short-term use, need to be monitored for any signs of failure |
| Nylon, Black ABS, PVC | NO | Not acceptable for use |

Bulk Tank Material of Construction and Requirements

| | |
|--------------------------|--|
| Material of Construction | Stainless Steel is required. If State and Local laws permit, existing poly storage tanks (high density) may be utilized if the tank is free of cracks, UV degradation or other signs of aging or structural defects for no more than one month. Corteva Agriscience will not bear risk or liability associated with the use of poly bulk tanks. Carbon Steel and Aluminum tanks are prohibited. |
| Venting Requirement | Normal venting is recommended. |
| Couplers | Standard 2" Kamlok Style Adapter with cap for receiving bulk deliveries. |
| Mixing Requirement | See mixing requirements in "General Storage Comments" section. |
| Piping and Rubber Tubing | Stainless Steel piping is the recommended standard. IMPORTANT INFORMATION: The use of automotive style heater hose as a portion or all the plumbing on a storage tank is strictly FORBIDDEN. If rubber tubing must be used as a portion of the plumbing, the rubber tubing MUST be lined with acceptable material (like Teflon or HDPE). When using lined tubing, extreme caution must be used to ensure the lining material fully contacts any metal tubing barbs. Failure to ensure the lining materials contact the metal fittings will result in a failure of the tubing at the fitting. All lined tubing used within a bulk system MUST be inspected prior to each use of the system to make sure the rubber hose has not swelled or softened from exposure to the product. |

Refillable Container Handling

| | |
|--------------------------|---|
| DOT/EPA | This product is not regulated by US Department of Transportation for various modes of transport. Containers must meet EPA Pesticide Container and Containment Rule requirements. Use UN/DOT approved containers. See Corteva Agriscience bulk storage and handling guide at Bulk Storage and Handling Guides Corteva Agriscience™ for additional general requirements. |
| Material of Construction | Clean polyethylene (high density) is required. Inspect each polyethylene tank for cracks, discoloration, or signs of structural flaws prior to each use. |
| Mixing | Enversa™ should be mixed well just prior to the use season and the first use of the tote. Containers with built-in circulation are the best and are preferred. Circulate for 30 min or at least twice the tank volume just before the use season and then weekly during the use season. Over-the-top mixing may not be adequate to mix the bottom of the tank, which is the critical area. Where necessary, consider cascading product from the source container into a target container, preferably while circulating the target container with a built-in pump that has circulation. View the bottom of the source container to assure no residues are left behind. |
| Couplers | Standard couplers are acceptable. |
| Piping/Rubber tubing | Rubber tubing MUST be lined with either Teflon or HDPE (high density polypropylene). When using lined tubing, extreme caution must be used to ensure the lining material fully contacts any metal tubing barbs. Failure to ensure the lining materials contact the metal fittings will result in a failure of the tubing at the fitting. All lined tubing used within a bulk system MUST be inspected prior to each use of the system to make sure the rubber hose has not swelled or softened from exposure to the product. |

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Seals, gaskets,
and hose lining

Recommend Silicone, Santoprene and Teflon (PTFE)

Bulk Product Tank Cleaning

Procedure:

1. Completely drain the tank
2. Visually inspect the tank interior and remove any loose solid material
3. A typical high-pressure washer is recommended for cleaning as they are efficient, and they generate (2-5 gpm) minimal wastewater
4. Using ambient temperature water or ambient caustic solution, spray bottom first with water to loosen any residue in the sump or cone
5. Continue pressure wash under roof shell, then inside wall of tank, working from top of the walls down
6. If possible, circulate rinse water for 10 minutes in the tank and piping. (Add water volume as needed to avoid starving the pump)
7. Completely drain the tank using the system pump, preferably exiting through the meter
8. Repeat steps 4-7 two more times
9. Wastewater from cleaning the tanks must be collected and used or disposed following Federal, State, and Local regulations and guidelines
10. After cleaning, inspect the tank for signs of corrosion or pitting on interior surfaces and welds. Inspect pump, pipes, hoses, and fittings for fitness of purpose
11. Document cleaning and inspection

Corteva requires a new Tank Inspection Form (TIF) confirming the tank is clean and was inspected prior to switching to a new Corteva product.

Always wear proper PPE as recommended on the product's SDS during inspection and cleaning.

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