# Enversa TM Herbicide

## Supplement to Bulk Storage and Handling Guide

This product-specific information supplements the Corteva Agriscience<sup>TM</sup> "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 <a href="https://www.corteva.us/Resources/Bulk-Storage-and-Handling-Guides.html">https://www.corteva.us/Resources/Bulk-Storage-and-Handling-Guides.html</a> or contact your Corteva Territory Manager or Sales Representative.

### **General Storage Comments**

- Enversa TM 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 Point1	NFPA 704 Diamond Ratings			Min. Storage Temperature	EDA C:13V1	
°F (°C)	Health Flammability		Reactivity	°F (°C)	EPA Signal Word	
>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		

<sup>&</sup>lt;sup>1</sup> 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	<b>Material of Constru</b>	ction 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 of transport.				
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 TM 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,	Recommend
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Recommend Silicone, Santoprene and Teflon (PTFE)

### **Bulk Product Tank Cleaning**

Note: Enversa will be prohibited to be put into tanks if the immediately proceeding product contained Group 4 chemistry unless they have been <u>professionally</u> cleaned by a 3rd party group. Additional restrictions or requirements maybe considered for other immediately proceeding products. Consult Corteva Agriscience personnel for specific details.

#### 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.

NOTICE: The information, procedures, methods, and recommendations herein are presented in good faith and are believed to be accurate and reliable as of the publication date, but may well be incomplete and/or not applicable to all conditions or situations. No representation, guarantee, or warranty is made as to the accuracy, reliability, or completeness of said information, procedures, methods, and recommendations. Nor is any representation, guarantee, or warranty made that application or use of any of the same will avoid hazards, accidents, losses, damages, or injury of any kind to persons or property, or give desired results, or that the same will not infringe patents of Corteva Agriscience. Readers must satisfy themselves as to the suitability of said information, procedures, methods, and recommendations prior to use.

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