

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

Kyro is a ZC formulation (a mix of CS and SC formulation types) which has excellent handling properties. If it is the first time Kyro is added into a bulk storage tank which was previously used for a product other than Kyro, it is critical that the tank be cleaned thoroughly prior to the addition of Kyro into the tank. Thoroughly mix the product (~3-4 tank turns) immediately after Kyro is added into the tank.

Prior to first use in-season, the bulk tank/tote containing Kyro should be recirculated long enough to provide 3 turns of the product. For example: 2400 gallons of product stored in a tank with a recirculation pump having a capacity of 20 gallons/minute (~1200 gallons/hour), would require roughly 6 hours of recirculation. The bulk tank should be assessed monthly during the application season, and the bulk tank should be recirculated additionally only if significant top clearing is observed. If using a filter while recirculating the product or pumping it off to intermediate bulk containers (IBC) or totes, use a screen that is 12 mesh or coarser.

Bulk stored product (tanks and totes) may freeze in winters (depending on the storage location and ambient temperature in the region), however, freezing will not hurt the product. When freezing, Kyro has shown little to no expansion properties, however, it is a best practice to allow some head space in bulk tanks/totes to allow for expansion and contraction. Once the product thaws after winter storage, mixing is required to obtain a homogenous product just prior to the use season. Prior to mixing the tank/tote for the first time after freezing, make sure there are no visible ice crystals in the product, which can damage the recirculation pump.

Do NOT use aluminum, mild or carbon steel tanks for bulk storage of Kyro, stainless steel is preferred.

Stainless steel piping is required for all storage facilities. Use mild steel piping with caution and for temporary use of less than one month. The long-term use of mild steel piping can result in unexpected pipe failure during mixing or transfer operations which will result in product loss.

Periodic cleaning of bulk tanks is recommended. Tanks should be cleaned and inspected every two to three years. Tanks can easily be cleaned using normal high-pressure washers with a general soap cleaning solution. High pressure washers are recommended because they are efficient at cleaning the tanks and they generate minimal wastewater. Wastewater from cleaning the tanks must be collected and disposed following local regulations and guidelines. After cleaning, the tank should be inspected for signs of corrosion or pitting on interior surfaces and welds to prevent tank failures when the tank is refilled.

Product Density vs. Temperature

Temperature °F (°C)	26 (-3.3)	30 (-1)	41 (5)	50 (10)	59 (15)	68 (20)	77 (25)	86 (30)
Density (lb/gal)	9.34	9.33	9.30	9.28	9.26	9.24	9.22	9.19

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		
> 239 °F (115.0 °C)	1	1	0	None (Product can freeze)	Caution

Material / Product Compatibility	Rating	Comment
Metals		
Stainless Steel	Acceptable	Required for bulk tanks; acceptable corrosion rate over short- and long-term use (~0.1 mpy ²)
Aluminum	Not acceptable	Moderately corrosive over long term use (1.0-5.0 mpy)
Carbon Steel	Not acceptable	Corrosive over long-term use (5.0-20.0 mpy)
Copper, Brass	Not acceptable	Corrosive over short- and long-term use (5.0-20.0 mpy)
Elastomers		
Silicone, Santoprene	Acceptable	Little to no effect
Buna N, Neoprene, SBR, EPDM, Hypalon, Viton	Not acceptable	Will likely absorb product and lose strength. Swelling or disintegration possible
Thermoplastics		
HDPE, UHMW	Acceptable	Little to no effect
LDPE, Acetal, Polypropylene, Teflon	Acceptable only for short-term use	Under long-term use, will disintegrate, embrittle or stress cracks
Nylon, Black ABS, PVC	Not acceptable	Disintegrates, embrittles or stress cracks

¹The 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.

²Mils per year (1 mil = 0.0254mm)

Bulk Tank Material of Construction and Requirements

Material of Construction	Stainless Steel is preferred. If the 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	Mix the bulk tank well after each delivery and just prior to the use season. At minimum, circulate at least 3 volumes of the tank to ensure mixing. Off-season mixing is not required, however, monthly mixing during the time the product is not frozen is highly recommended. The use of jet mixers within the tank are also highly recommended to increase the mixing capabilities of the recirculation system.
Piping and Rubber Tubing	Stainless Steel piping is the recommended standard. CRITICAL INFORMATION: The use of automotive style heater hose as a portion or all of 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 either HDPE (high density polypropylene) or use silicone or santoprene hoses. 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. Container 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	Stainless Steel is preferred. Polyethylene (high density) is allowed. Corteva Agriscience will not bear risk or liability with the use of stationary polyethylene bulk tanks. As required by the EPA, inspect each polyethylene portable refillable container for cracks, discoloration, or signs of structural flaws prior to each use.
Mixing	Kyro should be mixed well just prior to the use season and the first use of the tank. See the General Storage Comments Section above for guidance around mixing when filling the tank for the first time with Kyro. Containers with built-in circulation are the best and are preferred. 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.

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