

Keystone® LA Herbicide:

Supplement to Bulk Storage and Handling Guide

This product-specific information supplements the Dow AgroSciences “Bulk Storage and Handling Guide”.
 Use these documents together to understand the requirements for a bulk storage facility of this product.
 The Bulk Storage and Handling Guide is available at <http://www.dowagro.com/rc/steward/handling.htm>

General Storage Comments

Keystone® LA is a suspension of atrazine in acetochlor. A good circulation system is required. The product is thicker at cold temperatures, and a five horsepower pump capable of developing strong head is highly recommended.

Product Density vs. Temperature

Temperature °F (°C)	26(-3.5)	30 (-1)	40 (4)	50 (10)	60 (16)	70 (21)	80 (27)	90 (32)
Density (lb./gal.)	9.40	9.39	9.37	9.34	9.31	9.28	9.25	9.22

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		
>212 (>100)	2	1	0	None	Danger

Formulation contains water and will freeze, but has no history of problems upon thaw. Circulate product after thaw. Drain plumbing for protection against freeze damage.

Material / Product Compatibility

	Rating	Comment
Stainless Steel, Glass Lined Steel, Tin	OK	Stainless steel preferred.
Butyl, EP Rubber, Silicone, Delrin, Teflon	OK	
Polypropylene, Polyethylene (crosslinked, high-density and low-density),	OK	
Aluminum, zinc	Caution	Some pitting. Short term exposure only.
EPDM, Nylon	Caution	Will swell slightly, but is acceptable for hoses.
Mild Steel, Brass, Bronze, Copper	No	Slight to moderate corrosion due to water in formulation. Will discolor formulation. Mild steel pipe not recommended.
Cast Iron	OK	Some corrosion, but experience shows acceptable use in pumps, meters, fittings.
Hypalon, SBR, Polyurethane, Neoprene, Buna N (nitrile), Viton, PVC, Tygon	No	Severe swelling or absorption
ABS, Polycarbonate	No	Disintegrates, embrittles, or stress cracks
Carboline Phenoline 300/302 Lining	No	

Bulk Tank Material of Construction and Requirements

Material of Construction	Stainless steel is preferred. Do not use mild steel or aluminum tanks. Mild steel tanks are not allowed due to corrosion from aqueous product. If state and local laws permit, existing polyethylene storage tanks may be utilized if the tank is free of cracks, UV degradation or other signs of aging or structural defects. Dow AgroSciences will not bear risk or liability associated with the use of polyethylene bulk tanks.
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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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Venting Requirements	Self-closing PVRV Required on this product to minimize moisture loss from the formulation, avoiding any surface “skinning” or formulation evaporation.
Couplers	Standard 2” Kamlok style for receiving bulk deliveries.
Mixing Requirement	Keystone LA is a suspension of atrazine in acetochlor. A good circulation system is required. Circulate at least twice the tank volume once before the season. Off-season mixing is not required, however, mixing over-wintered material once in the Fall just before temperature drops below 50 °F is good practice. Mix product well again just before the season, or when product temperature reaches 50 °F. 5 Hp motors are recommended. Pumps capable of high flow against pressure head are required. Mixing at colder temperatures will do no harm, but will be more difficult due to increased viscosity.
Pump	Three horsepower pump motors as a minimum are required; however, five horsepower motors are highly recommended for all products. A double mechanical seal pump is recommended for products containing suspended solids to extend seal life. Double mechanical seals are recommended, but not required for other products.
Refillable Container Handling	
DOT	Not regulated by US Department of Transportation; however, containers must meet EPA requirements specified in the Pesticide Container & Containment Rule.
Material of Construction	Stainless steel is preferred. Polyethylene refillable containers allowed. Mild steel tanks are not allowed due to potential for corrosion.
Mixing	Circulate tank contents at least twice the tank volume once before the season if product was stored for several months or more. Although Keystone LA is a suspension formulation, it shows superior resistance to stratification or viscosity changes. In-season or off-season mixing is not required.
Couplers	Standard 2” Kamlok ² Style Adapter with cap for receiving bulk deliveries.

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