

Considerations for Selecting and Using Spray Hose

One of the most demanding hose applications is chemical spray, as seen in lawn care and pest control. The hose is subject to both internal and external stress. Internal hose stress results from the high pressures used and the aggressive nature of the chemicals. External stress is applied to the hose by pulling and dragging the hose, as well as exposure to the freshly applied chemicals.

Several Kuri Tec® hoses are offered for use in chemical spray applications and, in order to obtain optimum performance and service life, it is essential that the proper hose be selected and that proper care be taken in handling the hose.

What type of chemical is being conveyed?

In general, lawn care and pest control chemicals fall into two classifications, based on the physical form of the substance: wettable powders (WP) and emulsifiable liquid concentrates (EC).

Wettable powders are supplied in dry powder or granular form and are dissolved in water to create a sprayable solution. The substances are generally stable when in solution and will not “settle out” when allowed to stand. All of our pest control, lawn, and tree chemical spray hoses will handle most of these wettable concentrates in aqueous solutions at normal suggested concentrations.

Emulsifiable concentrates are supplied in a liquid form in which the herbicide or pesticide is dissolved in a carrier that is itself a solvent or oil-based substance. When mixed with water, these substances become “emulsions” in which the chemicals are not truly dissolved in the water. When allowed to stand, the chemicals will separate from the water, generally floating to the top. The emulsified carriers themselves have an effect on the hose’s core tube and, in combination with the other chemicals being used, can have a significant effect on the hose material when they separate and form a more concentrated phase.

For emulsifiable concentrate chemicals, we suggest the use of Kuri Tec hoses using PVC/Polyurethane blend compounds in the core tube, such as Series A1628, A1661 and A1687. “All PVC” spray hoses such as Series K4131

are not suggested for use with these chemicals, because of the possibility of phase separation in the mixture.

Regardless of the type of hose used with the emulsifiable concentrate chemicals, it is recommended that the hose be drained if it is going to stand for an extended period of time, since even on a reel the chemicals may separate out of the water emulsion and collect in concentrated bands at the top of the reel.

NOTE: All Kuri Tec hose suggestions are for aqueous solutions or emulsions of the chemical herbicide, pesticide or fertilizer in the suggested concentrations. For transfer of an emulsifiable concentrate in its pure form, a premium chemical spray hose such as Series A4086, with its polyethylene liner, is suggested.

At what working pressure and operating temperature will the hose be used?

All hoses, but particularly thermoplastic hoses, are affected by temperature. As the operating temperature rises, the material will soften slightly and the working and burst pressures will be reduced. It is not unusual for the hose temperature in a lawn spraying application to rise to 120° F. in summer. The individual pressure rating tables should be consulted to determine the maximum working pressure at 122° F. In general, one can expect a reduction of 40% to 60% in the working pressure rating at 120° F., when compared to the working pressures for the same hose at 70° F. This factor must be considered when selecting the proper hose.

What type of fittings should be used?

As explained in the Fitting Compatibility Guide on pages 64-65, a double-barbed fitting held in place with two band clamps appears to be the best choice for Kuri Tec spray hoses. In addition, the use of spring guards is highly recommended in order to prevent kinking of the hose at the fittings. Properly crimped ferrules over multi-barbed fittings are also suitable, provided a gap is provided at the end of the ferrule to avoid “wicking” of the fluid along the yarn.

Summary of Suggested Spray Hose Applications

Series	Description						Suitability	
	Core Materials	Jacket Properties				Working Pressure† (PSI @ 70°F)	Wettable Powders	Emulsifiable Liquids
		Material	Color	Surface	Perforations			
K3150	PVC	PVC	Clear	Smooth	No	250	Yes	No
K4131, 32, 37	PVC	PVC	Yellow	Ribbed	Yes	600	Yes	No
A1628	PVC/TPU	PVC	Grey	Ribbed	Yes	300	Yes	Yes
A1661 (i)	PVC/TPU	PVC	Yellow	Ribbed	Yes	600	Yes	Yes
A1687 (i)	PVC/TPU	PVC	Green	Ribbed	Yes	800	Yes	Yes
A4086 (i)	LLDPE	TPE	Blue	Smooth	Yes	800	Yes	Yes (ii)
A1710S	LLDPE	EVA	Translucent	Smooth	No	250	Yes	Yes (ii)
K4350	EVA	EVA	Translucent	Smooth	No	150 - 250	Yes	Yes (ii)

† **Note:** Working Pressure decreases as temperature increases. Pressure ratings can only be obtained with proper coupling procedures.

NOTE : (i) Two-pass reinforcement provides improved kink resistance and pressure performance.

(ii) Suitable for transfer of emulsifiable concentrate in undiluted form.