NIS 90-10™

Standard Nonionic Surfactant

NIS 90-10 is a low-foaming, nonionic, activator adjuvant designed to improve the effectiveness of pesticides requiring the use of a nonionic surfactant.

NIS 90-10 enhances pesticide performance by improving spray solution coverage and penetration of target leaf surfaces.

Nonionic Surfactant Facts

Enhancing herbicide performance with surfactants is more than just a wetting and spreading phenomena.

Most ordinary nonionic surfactants (NIS) contain nonylphenol ethoxylates (NPE) which are the traditional "workhorse" of NIS formulations.

Actual surfactant concentrations can range from 10–80%.

Products with less than 50% surfactant load act as spreaders, not activator adjuvants.

The HLB (hydrophilic/lipophilic balance) of an NPE based NIS is critical in predicting its performance.

Ethoxylation levels of NPEs determine their HLB, and can vary widely. This is usually not disclosed on product labels.

Different pesticides have different HLB requirements to optimize performance.

NIS 90-10 Benefits

Optimum HLB level for enhanced performance across a wide range of herbicides.

Excellent wetting and spreading on tough-to-cover leaf surfaces.

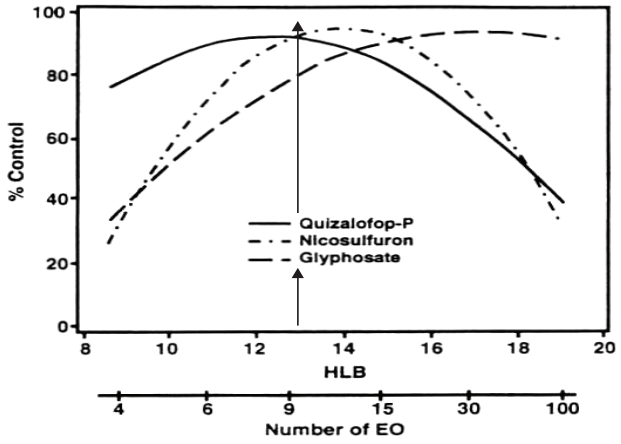
Contains humectins to extend uptake time for more consistent performance.

Easy-to-use, defoamed formulation.

Safer to handle and store.

- Nonflammable.
- Noncorrosive.

HLB Impact of Nonylphenol Ethoxylates on Herbicide Efficacy



(Quizalofop-P – low solubility 0.3 ppm)
(Nicosulfuron – mod. solubility 360–12,500 ppm @ pH 5–7)
(Glyphosate – high solubility 900,000 ppm @ pH 7)

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Jerry M. Green, Dupont Agricultural Products, Stine-Haskell Research Center

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