

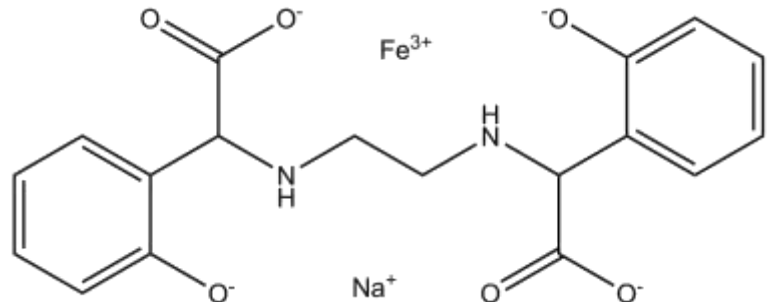


Product Information Sheet

E349

FeNa-EDDHA

Synonym: FeNa-EDDHA;
Ethylenediamine Bis(2-
hydroxyphenylacetic Acid),
Iron(III)-Sodium Salt
CAS: 16455-61-1
Formula: $C_{18}H_{16}O_6N_2NaFe$
MW: 435.17 g/mol



Properties:

Form: Powder
Appearance: Dark Reddish-Brown to Black
Crystalline
Application: Micronutrient
Solubility: Water
Typical Working Concentration: 43.5 mg/L for equimolar Fe^{3+}
in standard MS basal media
Storage Temp: Room Temperature
Other Notes: Plant Tissue Culture Tested; For Research Use Only

Application Notes:

EDDHA is a chelating agent for metal salts in plant tissue culture media. In standard micronutrient plant tissue culture media, the majority of EDDHA is chelated to Iron (III) over the pH range of 4-8 (Yunta *et al.* 2003). EDDHA also has the strongest affinity for Iron (III) amongst conventional chelating agents (e.g. EDTA, DTPA) (Halvorson and Lindsay, 1972). EDDHA is an effective iron delivery vehicle in dicots and non-grass monocots which utilizes a mechanism that reduces Iron (III) to Iron (II) for influx into the roots (Fox *et al.* 1996). EDDHA is particularly adept at delivering iron to dicots and non-grasses because it has a significantly lower stability constant for Iron (II) (Chaney *et al.* 1972)

Please Note: While PhytoTechnology Laboratories™ tests each lot of this product with two or more plant cell/ tissue culture lines, it is the sole responsibility of the purchaser to determine the appropriateness of this product for the specific plants that are being cultured and applications that are being used.

References:

Chaney RL, Brown JC, and LO Tiffin (1972) Obligatory Reduction of Ferric Chelates in Iron Uptake by Soybeans. *Plant Physiol.* Vol. 50:208-213
Fox TC, Shaff JE, Grusak MA, Norvell WA, Chen Y, Chaney RL, and LV Kochian (1996) Direct measurement of ^{59}Fe -labeled Fe^{2+} influx in roots of pea using a chelator buffer system to control free Fe^{2+} in solution. *Plant Physiol.* Vol. 111:93-100
Halvorson AD, and WL Lindsay (1972) Equilibrium Relationships of Metal Chelates in Hydroponic Solutions. *Soil Sci. Soc. Amer. Proc.* Vol. 36(5):755-761
Yunta F, Garcia-Marco S, and JL Lucena (2003) Chelating Agents Related to Ethylenediamine Bis(2-hydroxyphenyl)acetic Acid (EDDHA): Synthesis, Characterization, and Equilibrium Studies of the Free Ligands and Their Mg^{2+} , Ca^{2+} , Cu^{2+} , and Fe^{3+} Chelates. *Inorg. Chem.* Vol. 42(17):5412-5421

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