

OPERATING INSTRUCTIONS

ISOPROPYL ESTERS OF 2,4-D AND 2,4,5-T

These two esters are manufactured in the same equipment and by similar processes.

The wet 2,4-D or 2,4,5-T acid is esterified with 99% isopropyl alcohol using benzene to azeotropically distill off the water present in the acid and that formed in the reaction.

The esterification is carried out in glass-lined, jacketed reactors with condensers and reflux separators to remove water from the azeotrope. When a titration shows that a batch is 90% esterified, the excess alcohol and benzol are distilled off for re-use.

The crude ester is washed with twice its volume of 0.5% sulfuric acid at 60°C. to remove iron salts. The unreacted 2,4-D or 2,4,5-T acid is next extracted with a dilute caustic soda wash. The caustic wash is saved and the 2,4-D or 2,4,5-t acid in it is recovered and re-used. The ester is then washed twice with twice its volume of hot water.

The washed ester is dried, filtered and is ready for sale as a technical ester or for use in formulations.

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