On-line Analyzer Systems for Safety and Control of EDC Production Plants

CHLORINATION PROCESS \( \text{C}_2\text{H}_4 + \text{Cl}_2 \rightarrow \text{EDC} \)

LOW concentration \( \text{C}_2\text{H}_4 \) → optimum efficiency of reactor

PRE Coolers

2nd AIR Coolers

FREON Cooler

N\(_2\)

Recycle GASES

Liquid EDC

CHLORINATION REACTOR

CATALYST \( \text{FeCl}_3 \)

\( \text{Cl}_2 \), \( \text{Cl}_3 \), \( \text{Cl}_4 \)

\( \text{O}_2 \), \( \text{N}_2 \), \( \text{HCl} \)

\( \text{CO}_2 \), \( \text{EDC} \)

INCINERATOR or NaOH SCRUBBER

EdC from OXYCHLORINATION

HEAVY COLUMN

EXTRACTION of HEAVY by-products

Liquid EDC

LIGHT COLUMN

HEAVY impurities storage TANK

EDC STORAGE TANK

by Stripping + UV

FeCl\(_3\) in liquid EDC

typ range: 0 – 3000ppm

CHLORINATION PROCESS

\( \text{O}_2 + \text{C}_2\text{H}_4 \rightarrow \)

by Paramagnetism

\( \text{O}_2 \), \( \text{VNT GAS} \)
typ range: 0 – 35ppm

NEW

Liquid EDC

typ range: 5000ppm

by Chromatography

Impurities in liquid EDC

typ range: 5000ppm

by Infrared

HCl in liquid EDC

0 – 50ppm

by Conductivity

0 – 10ppm HCl in EDC

Triple System for SAFETY

NEW

by Infrared

Liquid EDC

typ range: 0 – 50ppm

HClin liquid EDC

Ionic Detection using Conductivity

Typ range: 0 – 50µS corresponds to 0 – 10ppm HCl in EDC

EDC from OXYCHLORINATION

by Chromatography

Typ range: 0 – 3000ppm

by Stripping + UV

Typ range: 0 – 3000ppm

Heavy COLUMN

EXTRACTION of HEAVY by-products

EdC from OXYCHLORINATION

Recycle GASES

Vent GASES

INCINERATOR or NaOH SCRUBBER

by Infrared

Typ range: 0 – 30% vol

Typ range: 0 – 15% vol

WATER in liquid EDC by Infrared

Typ range: 0 – 50ppm

WATER in liquid EDC by Opacimeter

Typ range: 0 – 50ppm

by Stripping + UV

Typ range: 0 – 3000ppm

by Chromatography

Typ range: 0 – 50ppm

FeCl\(_3\) in liquid EDC

Typ range: 0 – 3000ppm

FeCl\(_3\) in liquid EDC

Typ range: 0 – 3000ppm

Water in liquid EDC by Infrared

Typ range: 0 – 50ppm

Water in liquid EDC by Opacimeter

Typ range: 0 – 50ppm

Recycle GASES

Vent GASES

INCINERATOR or NaOH SCRUBBER

by Infrared

Typ range: 0 – 30% vol

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WATER in liquid EDC by Infrared

Typ range: 0 – 50ppm

WATER in liquid EDC by Opacimeter

Typ range: 0 – 50ppm

by Stripping + UV

Typ range: 0 – 3000ppm

by Chromatography

Typ range: 0 – 50ppm

FeCl\(_3\) in liquid EDC

Typ range: 0 – 3000ppm

Water in liquid EDC by Infrared

Typ range: 0 – 50ppm

Water in liquid EDC by Opacimeter

Typ range: 0 – 50ppm

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