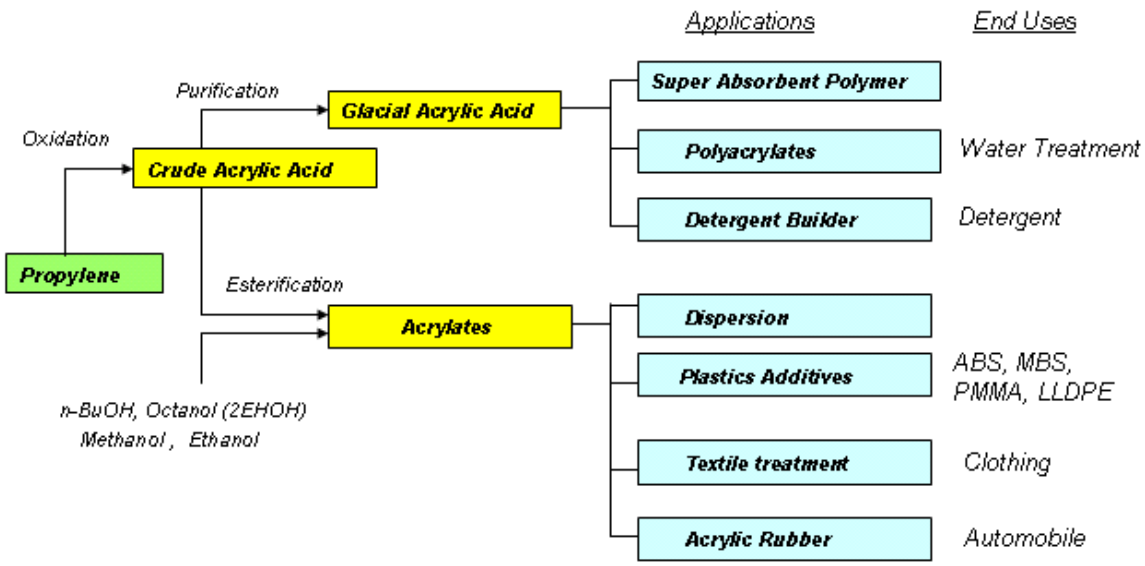
MITSUBISHI CHEMICAL GROUP | Mitsubishi Chemical Corporation

Mitsubishi Acrylic Acid and Acrylic Esters Technology

1. AA(Acrylic Acid) and AE(Acrylates) product chain

The major derivatives of AA are Super Absorbent Polymer, Detergent Builder. The major ones of AE are Dispersion, Plastics Additives, Textile Treatment and Acrylic Rubber.

Product Chain



Diapar

Super Absorbent Polymer（SAP）

Paint

Acrylate, Emulsion

Mitsubishi AA/AE process and oxidation catalyst are our original. Our plants of AA/AE are located in Yokkaichi near Nagoya. Also, several companies are operating Mitsubishi AA/AE process and catalyst all over the world.

Mitsubishi Chemical Co. (MCC) has the down stream users as group companies, such as Chuo Rika for Dispersions.

2. FEATURES OF PROCESS

The AA/AE processes are designed based on the actual plant data in Yokkaichi and our licensees. We have much experience of operation and maintenance know-how.

The characteristics and superiorities of Mitsubishi AA/AE technology are following points.

(1) Economical process Product Application

a) CATALYST for AA

Mitsubishi oxidation catalyst is top performance. It has very high yield and long life. And Mitsubishi continues the development of oxidation catalyst. Many users are satisfied by Mitsubishi oxidation catalyst.

b) Process of AA

There is little wastewater from Mitsubishi AA process. So, Mitsubishi AA process is not only economical but also good for ecology.

Operation of Mitsubishi AA process is stable, because it prevents polymer formation. So, plant user does not need often to shut down the plant for cleaning.

c) Process of AE

Mitsubishi AE process is continuous reaction system and uses specialized esterification catalyst. And also Mitsubishi AE process is low energy consumption.

(2) High Safety

Our licensees and our own plants have never met serious accidents and perfect safety records.

3. DESCRIPTION OF PROCESS

(1) AA Process

Acrylic Acid is produced from Propylene and Air.

This section consists of the following tow sections

(1) Oxidation Reaction section

(2) Purification section

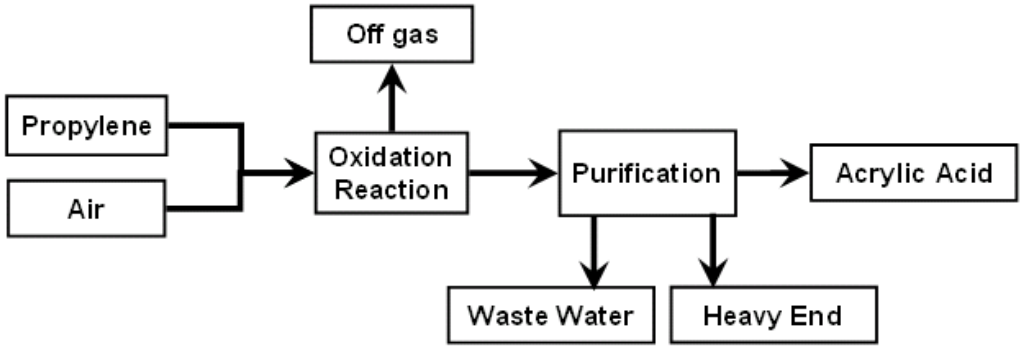
The main reactions are as follows.

$CH_3CHCH_2 + O_2 \longrightarrow CH_2=CHCHO + H_2O$

(Propylene) (Acrolein)

$CH_2=CHCHO + 1/2O_2 \longrightarrow CH_2=CHCOOH$

(Acrylic Acid)



(2) AE Process

In this process, Acrylates are produced from Acrylic Acid and Alcohols.

This section consists of the following process.

(1) Esterification Reaction

(2) Purification Process

The main reaction is as follows.

$CH_2=CHCOOH + ROH \longrightarrow CH_2=CHCOOR + H2O$

(Acrylic Acid) (Alcohol) (Acrylate)

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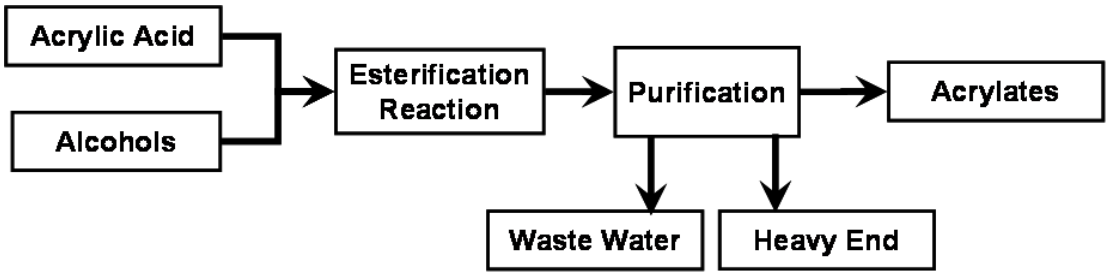

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