



PE139: PVC Manufacturing & Process Troubleshooting

Training Description:

Polyvinyl chloride, also called polychloroethene or PVC, is a thermoplastic. It turns soft when heated and hard when cooled. Polyvinyl chloride is made by polymerization of the monomer vinyl chloride (chloroethene) $\text{CH}_2=\text{CHCl}$. PVC can be made softer and more flexible by adding plasticizers. Phthalates are often used to soften PVC in this way.

Vinyl polymers are the most common type of plastic. In popular usage, "vinyl" refers mostly to PVC, but there are two other vinyl polymers which are more common. The most common is polyethylene, the second most common is polypropylene. Another, less used, is polystyrene.

This intensive course covers a detailed and up-to-date overview of PVC manufacturing and process troubleshooting. It covers the physical properties and safety aspects of vinyl chloride monomer; the process overview, proper operation and troubleshooting procedures involved in the polymerization of PVC; the physical properties and characterization of PVC; the improvements in PVC related to safety health and environment; the PVC flammability, fire performance and individual fire properties; the associated test methods; and the various applications of PVC.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Apply an in-depth knowledge on PVC manufacturing and process troubleshooting including its chemistry, physical structure and commercial aspects
- ✓ Identify the physical properties and safety aspects of vinyl chloride monomer
- ✓ Discuss process overview and carryout proper operation and troubleshooting procedures involved in the polymerization of PVC
- ✓ Recognize the physical properties and characterization of PVC
- ✓ Emphasize the improvements in PVC related to safety health and environment
- ✓ Describe PVC flammability, fire performance and individual fire properties as well as employ associated test methods
- ✓ Use the various applications of PVC in a professional manner

Training Designed for:

This course is intended for Managers, Engineers and Technical Staff who are working in PVC manufacturing industries. Further, this course is suitable for those who are involved with PVC industries such as Contracts, Purchasing and Sales Individuals and Marketing Staff who are interested to know the PVC manufacturing process.

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction to PVC
 - Chemistry and Physical Structure
 - History of PVC
 - Commercial Aspects of PVC
- ❖ Vinyl Chloride Monomer
 - Physical Properties
 - Safety Aspects
- ❖ Polymerization of PVC
 - Suspension Process
 - Suspension and Emulsion Polymerization

DAY TWO:

- ❖ Polymerization of PVC (cont'd)
 - Raw Material and Additives
 - Procedure for Batch Polymerization
 - Polymerization Equipment Operation

DAY THREE:

- ❖ Polymerization of PVC (cont'd)
 - Unit Operations for PVC
 - Downstream Equipment
 - Concerns in Polymerization of PVC & Troubleshooting
 - Quality Deviation & Troubleshooting

DAY FOUR:

- ❖ Physical Properties and Characterization of PVC
 - Characterization at the Molecular Level
 - Characterization at the Particulate Level
 - Characterization of Vinyl Compounds
 - Typical Characterization Requirements in the Laboratory
- ❖ Practical Session / Site Visit

DAY FIVE:

- ❖ Safety Health and Environment
 - Waste Management
 - Improvements in PVC Related to SHE
- ❖ Flammability and Fire Performance
 - Thermal Degradation and Thermal Decomposition
 - Thermal Decomposition and Fire Properties
 - Fire Performance: General PVC Application Overview
 - Use of Different Grades of PVC for Various Applications
- ❖ Course Conclusion
- ❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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