

POLYMERUPDATE ACADEMY

EDUCATIONEM RESPONSUM EST

TECHNOLOGY OF PAINTS

Prepared & Conducted by

Prof. (Dr.) D. D. Kale

B.Tech., M.Chem.Engg.,
Ph.D.

Honorary Chancellor -
Polymerupdate Academy

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INDEX

1. Introduction to Paints Technology
2. Resins for Paints
3. Solvents used in Paints
4. Fillers and Extenders
5. Pigmentation
6. Additives in Paints
7. Types of Paints and Paint Manufacturing
8. Varnishes
9. Rheology in Paints Technology

Lecture 1

Lecture 1 deals with introductory part of paints technology. It covers purpose of paints, concept and definition of paint. It also describes various constituents and properties of paints.

Lecture 2

Lecture 2 covers various types of resins for paints, modified oils, alkyd resins, saturated polyester resins/oil-free polyester resins, and epoxy resins.

Lecture 3

Lecture 3 includes the purpose of solvents in paints, their solvent properties, classification of solvents for paints, water as solvent, hydrocarbon solvents, ketonic solvents, ester solvents, alcohol solvents and glycol ether solvents.

Lecture 4

Lecture 4 contains detailed description of fillers and extenders used in the manufacturing of paints.

Lecture 5

Lecture 5 describes about pigmentation in paints. This comprises the introduction to pigments, properties and classification of pigments, inorganic and organic pigments and also metallic pigments.

Lecture 6

Lecture 6 explains about paint additives and their respective classification. additives for solvent-based and water-based paints have also been covered.

Lecture 7

Lecture 7 speaks about the various types of paints and paint manufacturing. classification of paints, paint curing , primer paints, water-based paints, distemper paints, oil bound distemper, solvent based paints, film forming process and summary of types of paints and their properties have been described.

Lecture 8

Lecture 8 gives information on different types of varnishes.

Lecture 9

Lecture 9 details about the rheology in paints technology, its introduction and types of viscosity flow behaviour and also the measurement of viscous properties.



PROF. (DR.) D. D. KALE

B.TECH., M.CHEM.ENGG., PH.D.

Honorary Chancellor - Polymerupdate Academy

Born on November 16, 1945, Prof. (Dr.) D. D. Kale is a Chemical Engineer and has obtained his Ph. D. from University of Salford, UK.

With a teaching experience of over 40 years, Prof. (Dr.) D. D. Kale retired from University of Mumbai's Department of Chemical Technology, UDCT, Mumbai in 2005 as a Professor of Polymer Technology and as a Head of the Department of Polymer Engineering.

At present, he is a technical advisor to Giriraj Group, Mumbai and in the past has also been a consultant to several plastics industries.

He is a member of high power expert committee to Government of Maharashtra on various environmental issues and is on the expert panel for centers of excellence by DCPC. (Dr.) D. D. Kale is also a member of committee to define single use plastics set up by Ministry of Chemicals and fertilizers, New Delhi.

He has been a Visiting Professor in South Korea.

After superannuation in 2005, he has worked with Reliance Industries Ltd. for a tenure of three years.

His research interests include polymer processing, rheology, product design and recycling. He has guided 28 Ph. D. and 65 Masters Students. He has published more than 100 papers in peer reviewed journals and has one patent to his credit. He has presented papers in several International conferences such as IUPAC and has travelled widely.

He is associated with many professional bodies such as PLASTINDIA, All India Plastics Manufacturers Association, (AIPMA), IPI and SPE etc.

Prof. (Dr.) D. D. Kale has trained more than 5000 undergraduate and post graduate students in India and overseas. He has also trained more than 1000 industry personnel and has successfully authored two books. He was Honorary Editor of the journal, "Chemical Engineering Journal" published by I.I.Ch.E., India

WORK EXPERIENCE:

- Jan 2018 till date - Technical Director, Euressia Polymers, Mumbai.
- Feb 1, 2010 to - May 2012 - Director, Shroff S R Institute of Chemical Technology, Vataria, Taluka Valia, Bharuch, Gujarat, India
- Aug 1, 2011 to Dec. 2012 - Visiting Professor, IIT Gandhinagar
- Jan 1, 2006 to Dec 31, 2008 - Advisor, Reliance Industries Ltd.
- Jan. 31, 1991 - Nov 30, 2005 - Professor of Polymer Technology, Head, Plastics and Paints Technology Division UICT, University of Mumbai.

AWARDS AND HONORS:

1. Elected as a Fellow of Maharashtra Academy of Science (1998)
2. Received the Teaching Services Award (Best Teacher) of Mumbai University, 2003-2004
3. Received the Prof. K. S. Armugam National Award for Innovative Research in the Field of Engineering and Technology by the Indian Society for Technical Education (ISTE) New Delhi (2004)
4. Received 'Life Time Achievement Award' from Color Society, (2015)

OTHER INFORMATION:

- Editor 'Chemical Engineering Journal' published by I.I.Ch.E. (1992 – 94)
- Designed course work for
 1. Plastics for non-plastic personnel,
 2. Flexible packaging
 3. Coloration of plastics
 4. Chemical Engineering for plant personnel
- Headed the Knowledge Management group of I.P.I.
- Member of Board of Studies for Polymer Engg. Course of many Universities.

Has organized more than 10 Refresher Courses for Industry on behalf of Professional Bodies like IPI, SPE, Indian Institute of Chemical Engineers, Indian Small Scale Paint Association.



DR. SHREEKANT PATIL

**B.Sc.(Chemistry), B.Sc.(Tech.), M.Sc.(Tech.),
Ph.D.(Tech.), DBM, DIM, C. Engg
Faculty - Polymerupdate Academy**

Dr. Shreekant Patil is an accomplished Polymer Technologist with over 30 years of comprehensive experience with Technical, Commercial, and Managerial skills.

After graduating B.Sc. in Chemistry, he completed his B.Sc. (Tech.), M.Sc. (Tech.), Ph.D. (Tech.) qualification from the Institute of Chemical Technology (ICT, Mumbai). Dr. Patil is also an expert in educational Management advancement.

With an industry experience of working with prominent resin manufacturing companies and having served the paint and ink industries, Dr. Patil has been a Business Head and was on the Board of Directors for various MNC's like Reichhold India, Ashland India, and Ineos Composites India.

He was responsible for foreign collaborations and building world-class automated greenfield resin manufacturing plants having large manufacturing capacities and has played an important role in the mergers and acquisitions of multinational businesses. Having contributed immensely to the circular economy by developing and commercializing various resins products from industrial waste for most of the high-performance composite applications, he has a track record of turning around loss-making companies into sustainable profitability by introducing cost effect resin products and import substitutes.

Dr. Shreekant Patil has authored two technical books on the Testing of Paints which is ready reckoner in the paint industry, along with 38 Research and Review Papers to his credit. He has successfully presented 6 Technical papers in National and International Conferences.

With extensive experience in organizing Technical Seminars, Workshops, Short courses, Training programs, Roadshows for customers, exhibitions in associations with professional institutes and bodies, Dr. Patil has also been a Lecturer and Examiner for various educational institutes and professional bodies.

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