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# DMAI Newsletter

The Dyestuffs Manufacturers Association of India

Vol. XXXVIII

Issue 1

July - September 2017

## 67th Annual General Meeting & Awards night

*Cover Story*



*Award Winners*



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*Group Estd. 1923*

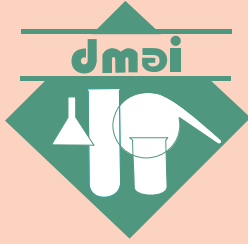
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The Dyestuffs Manufacturers  
Association of India

# **DMAI Newsletter**

**Published by**

S. Balasundaram  
Executive Secretary

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## Contents

Editorial .....	3
President's Page .....	5
<b>Cover Story</b>	
67th Annual General Meeting & Awards night .....	7
<b>FEATURES</b>	
Utility Systems	
-K. Sahasranaman .....	13
Low VOC Paints	
- Sambit Roy .....	16
<b>DMAI News .....</b>	<b>15</b>
<b>Forthcoming Events .....</b>	<b>17</b>
<b>Seminars &amp; Meetings .....</b>	<b>18</b>



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**Mr. Ram Ajekar**  
Honorary Editor



**Mr. Virendra Widge**



**Prof. Vinod Kanetkar**



**Mr. Vinit Shah**



**Mr. Sandeep Shah**

Dear Readers,

In the aftermath of demonetization and subsequently introduction of GST in July, India's overall economic growth witnessed initial setback. GDP growth fell four quarters in a row to 5.7% from 7.9% in the previous year. Industrial production expanded a modest 1.2% in July as compared to the last year's 4.5% growth. However, India's foreign exchange reserves surged to a record high of \$400 billion mainly on account of higher flow of funds from portfolio investors and foreign direct investments. After a setback in July, exports also rebounded in August and grew further an impressive 26% in September as a result of which trade deficit narrowed to its lowest level in seven months. Besides, industrial output grew 4.3% in August. There is a widespread belief that the momentum will be sustained raising the hopes that the pace of initial setback due to GST is over.

A number of clarifications have been coming forth with regard to the procedural aspects of GST and the GST council has announced necessary steps to fasten the refund of GST to exporters through proper filing of Shipping Bills and Export General Manifest. The Government has hinted at reducing the number of GST rates to probably two in the future and may also initiate more measures towards ease of doing business. The filing of E Way bill which is postponed will, for all practical purposes, become redundant and hope will be done away with.

The rains have been fairly normal and well spread. The agricultural output is expected to be satisfactory and with Government taking several positive steps to increase the incomes in the hands of farmers the agrarian crisis is sure to ease in the near future.

The Chinese authorities have come down heavily on polluting industries affecting uninterrupted supplies adversely besides steep jump in prices of key intermediates and chemicals which India has been importing. The cost of production has also been steadily increasing in China and is expected to increase further. The Chinese Industrialists are considering the possibility of setting up these industries in other neighboring countries. The Indian Colorants Industry must work towards becoming self reliant and also increase our exports. In this regard, the Government also should help our industry by faster granting of environmental clearances and allocation of sufficient and suitable land for those who undertake to treat effluents to comply with the environment norms.

The performance of the Indian Colorants Industry has been disappointing as the demand continues to be sluggish. The Textile Industry is facing low demand from the domestic as well as exports markets. There is high expectation that the trend will reverse and the demand will start upward momentum from November onwards. In the meanwhile, the Colorant Industry must focus on innovation and efficiency to be cost competitive and also strive on find ways to reduce waste generation in order not only to reduce effluents, but also to reduce cost through newer methods and technology.

All of us in the editorial team wish you all a Colorful Diwali and a happy, prosperous and peaceful New Year.

**Ram Ajekar**  
*Honorary Editor*

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I am happy to communicate with you in this second quarter of the new year. This will be fifth quarter after assuming new office by the newly elected committee.

Friends, we are witnessing as well as passing through many historic economic reforms in Indian financial history. These significant changes are now hitting the business ground, testing its resilience and readiness! At the same time we are entering the most festive days of our Calendar.

### **Nature, the climate**

On the whole the country had good monsoon across regions. Though in many states there were floods and near flood like situations too. But largely the situation is satisfactory. The good monsoon sets a better foundation for the agriculture and the rest of industries that depends upon it.

### **Economic Reforms & GST law**

GST, the biggest economic as well as tax reform in post-independence India is rolled out on 1st July 2017. Visionary thinking, political hard bargains and now bold in-depth implementation execution is underway. The industry and trade have had many challenges, issues and need for specific changes. Various industry associations have been making representations to the Government for specific changes. Exporters, in particular, had many practical and genuine issues to redress & rectify. I think the 6th October GSTN Council meeting and following changes that Government announced and implemented will ease the pressure on industry and trade. Now one full quarter's experience is gained and Government is keeping an open mind to keep improving the regulatory process, and taking policy decisions like rates revision. So, we all can be very optimistic about benefiting from the new tax regime. The economic and industrial activity must get simpler regulatory governance for all, so as to be more productive.

### **The Economy**

There were serious concerns within the first quarter of new GST regime about slowing down of industrial production and demand behaviour. As we read the new figures for September the economy seems to be setting back to a stable growth trajectory.

### **Banking Reforms'**

The Governments' bold initiatives in bank lending in terms of assets quality is now actively implemented. The new bankruptcy laws are fully operational. I had reminded in the last quarter that we must review individually our companies compliances. Interest rates have slowly come down and we expect they will further drop during the second half of financial year as good amount of financial resources for lending are available in banking system. Also, the inflation has remained under control and within limits. I feel certain that Industry can look forward to easy finance, lowering of interest rates, but with cautious disciplined approach.

### **Environment Protection & Regulations**

The Government continues to strictly apply the environment norms and regulations aggressively, in particular across chemical zones. In last quarter several regional Pollution Control Boards have issued several closure directives, as well as undertaken norms reviews with CPCB (central board). Historically we do not have a very good track record. So, it is likely that many industry regions/estates find it more challenging to adhere to compliance and honour this social responsibility. However, we must all be committed to align with the changing times and become better compliant.

### **Festival Time!**

As usual post September till early November is the most festive time. Most of our harvest season related festivals fall around this period. So after grand Dussehra celebrations we are here for Diwali times. I wish all the readers a Very Happy Deepawali festivities and a prosperous new Samvat Year 2073!



**JITENDRA PATEL**



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## 67th Annual General Meeting & Awards night

**T**he 67th Annual General Meeting of the Dyestuffs Manufacturers Association of India (DMAI) and Awards Presentation function was held on Friday, the 7th July 2017 at Hotel Hyatt Regency, Sahar International Airport Road, Andheri (E), Mumbai-400 099 from 6.45 P.M. onwards.

Mr. Alexander Wessels, CEO, Archroma was the Chief Guest. More than 100 members of the Association with their spouses, special invitees, guests & other dignitaries and press attended the meeting.

### Business Session

At the outset President Mr. Jitendra Patel welcomed the members.

While presenting the Annual Report for the year 2016-2017, Hon. Secretary, Mr. C.K. Singhania highlighted the various activities of the Association as under :

- Various representations to the Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, GOI, on issues like Comments on Setting up of Central Institute of Chemical Engineering and Technology (CICET), Suggestions on Amendment / Upgradation of India -Korea CEPA and Expansion on India - MERCOSUR

preferential Trade Agreement (PTA), Inputs on Rules of Origin under the proposed India-Mauritius comprehensive economic cooperation and partnership agreement (CEPA), Submission of information on power requirement for the colorant industry till 2027, Representation for inclusion of Fluorescent Brightening Agents/Optical Brightening Agents on imports into Australia & New Zealand for tariff concession, Comments on Regional Comprehensive Economic Partnership (RCEP) a Free Trade Agreement (FTA) among 16 countries, Representation on Sec. 38 – Refund of Tax (Sub-Sec.4A), Notes on REACH, Skill Development and Ease of Doing Business for the proposed Round Table Conference.

### Other Representations

Submitted to the Ministry of Environment, Forests and Climate Change, GOI a brief write-up on the environmental issues of Dyes and dye Intermediate sector, representations to the Dept. of Revenue, Central Board of Excise & Customs, Ministry of Finance, GOI requesting to reinstate the DBK rates, submitted details of 5 best practices adopted by the colorant industry to CPCB, representation to Municipal Corporation of Greater Mumbai for Renewal of 'N' Form.



DMAI Office Bearers on the dais



## Other Activities

Conducted 66th Annual General Meeting and Awards Presentation Function on 1st July 2016 at Hotel Sea Princess, Mumbai, participated in the 9th edition of India Chem 2016 organized by FICCI in Mumbai from 1st to 3rd September 2016, attended meeting to set up Central Institute of Chemical Engineering and Technology (CICET) organized by the Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, GOI on 22nd September 2016 in Mumbai, conducted Half Yearly Meeting at Hotel Promenade, Puducherry on 12-15 January 2017, organised 7th edition of International Convention on Colorants -2017 on 9-10 February 2017 at The Club, Andheri (W), Mumbai, led delegation to China Interdye 2017 Exhibition from 12th to 14th April 2017 at Shanghai, China, presentation by Imm. Past President Mr. Janak Mehta on 'Analysis on Environmental Standards of India's Textile Industry' at the Asia Textile Innovation Forum 2017 in Mumbai on 20th April 2017, participated in the Seminar on GST Trade Awareness organized by Chemexcil on 9th May 2017 in Mumbai, submitted Budget Proposal for the Union Budget 2017-2018 and regular publication of DMAI NEWSLETTER and DMAI page in Colourage of Colour Publications.

Mr. Rajen Shah, Hon.Treasurer thereafter presented the Audited Income & Expenditure A/C for the year ended 31-3-2017 and Balance Sheet as on 31-3-2017.

In the lively question-answer session that followed, burning issues concerning the colorant industry like GST for exports, LUT/Bond/Bank Guarantee, Refunds, Fate of Export Promotion Schemes for member exporters post GST regime, squaring of GST with input tax credit, expansion of existing units in the critical list for chemical zone etc., were discussed at length.

## Open Session

Imm. Past President Mr. Janak Mehta anchored the proceedings.



**Imm. Past President  
Mr. Janak Mehta**

In his Presidential address, Mr. Jitendra Patel at the outset welcomed the members for the 67th Annual General Meeting and Awards Presentation Ceremony. He thanked Mr. Alexander Wessels, CEO Archroma for having agreed to participate as the Chief Guest. He gave a brief summary of DMAI and its activities, particularly its status as being recognized as an apex body representing the colorant industry by the Ministry of Chemicals & Fertilizers, Govt. of India.



**President  
Mr. Jitendra M. Patel**

Mr. Patel, while giving a quick recap of the year, complimented the Central Govt. under the able and dynamic leadership of Prime Minister Mr. Narendra Modi for having rolled out GST w.e.f July 2017. This was one of the most important economic tax reforms the Govt. has initiated and implemented. He appealed to the industry to assimilate this tax reform to make it a national success.

Mr. Patel cited a few global instances in the recent past like United Nation's Climate Change Conference in 2015 and the 21st Session of the Conference of the Parties (COP21) that negotiated the Paris Agreement, a global document on the reduction of carbon footprint with emphasis and focus on sustainable environment. Despite withdrawal by the largest economic power from it in the recent past, our country has an onerous responsibility to prove the results in the UN climate forum and the world about the positive outcome. In this endeavour, our industry will have a significant role and responsibility to control the processes, which are detrimental to the environment, Mr.Patel pointed out.

Mr. Patel was happy to mention that DMAI took a delegation to China Interdye Exhibition 2017 and participated in other global and domestic events. DMAI is well associated with ITMA since 2011, wherein Imm.Past President Mr. Janak Mehta is a member of their Advisory Committee. Mr. Patel also mentioned about Asia Dyestuff Industry Federation (ADIF) mooted by the China Dyestuffs Industry Association, wherein Mr. Janak Mehta was

invited to be the 1st Chairman. The Federation is yet to take off.

The successful conduct of the 7th Edition of International Convention on Colorants 2017 (COC 17) was another eventful function organized by our Association jointly with ICT, Mumbai in February 2017, Mr. Patel added. A good number of members participated in this knowledge platform, which covered interesting topics like 'Waste Water Treatment Technology, Process Intensification, Natural Dyes, Functional Colorants etc.

In conclusion, Mr. Patel recalled that constructive suggestions and representations on important issues related to the industry are continued to be submitted to the Govt. and concerned authorities as in the past. He thanked the members for their active participation and support in all the activities of the Association. He also complimented DMAI Secretariat for their co-operation in all its activities.



The Chief Guest was thereafter welcomed with flower offerings as a mark of our respect.

Mr. Alexander Wessels then presented the Annual Awards to the recipients from the industry for the year 2016-2017 for excellence in several fields like performance in the exports of Dyestuffs, Pigments, Optical Whitening Agents, Domestic Market, Merchant Exporter, Pollution and Safety & Hazards Control under different categories. Mr. Virendra Widge, 1st Vice President and Member of the Awards Committee declared the award winners under each category. Citation was also conferred on the technical awardees (list enclosed).



Mr. Virendra Widge

Certificates were also presented to members having obtained ISO 9001 & 14001 accreditation during the year.

Cash prize of Rs.10,000/- each with a trophy sponsored by our member units and certificate were also presented to the students of ICT, Mumbai, who had topped their respective disciplines for 2015-2016.

Mr. Anjani Prasad, Managing Committee member, thereafter introduced the Chief Guest to the audience.

At the outset, Mr. Alexander Wessels thanked DMAI for inviting him to participate in the AGM as the Chief Guest. In the prevailing context of protecting the environment from the ill effects of pollution, Mr. Wessels selected a relevant topic on 'Sustainability in our Value Chains' for addressing the gathering through Power Point presentation. He quoted Prime Minister Modi on sustainable development, which read, 'We in India have always believed in sustainability. For us, the law of nature holds great value. If we all observe it, then man - made laws will not be required. A path becomes sustainable, if all stake holders are benefited'.

In this context, Mr. Wessels stressed the onerous responsibility of the industry to protect the environment at all costs.

While referring to the Prime Minister's address on 2nd July 2017 at Gandhi Nagar on Govt's 5F Vision for sustainable textile value chains i.e. Farm to fibre, Fibre to Fabric, Fabric to fashion and Fashion to Foreign, Mr. Wessels pointed out that to realise this 5F Vision, the



View of audience



downstream products of value addition by saving much in water, time, power, chemicals and CO2 emissions.



Mr. Wessels

industry needs to adopt the best environmental practices and meet changing consumer demands. Towards achieving this transition, it is all the more important for the textile industry to ensure less usage of water and application of resource efficient and cleaner production practices, ultimately resulting in reduction of usage of natural resources like water, energy and chemicals.

In hazardous chemical control, particularly in textiles, the focus of colorants should be in “Manufacturing Restricted Substance List” (MRSL). Sustainability becomes part of quality assurance before value addition. Mr. Wessels explained this through an abstract with specifications on technical grade concentration limits in various chemical formulations. He defined the new requirement for understanding the implication of colorant industry by in-house infrastructure to control the inputs, manufacturing process and cleaning the product from hazardous chemicals. Transparency of commercial product test results in actual MSDS data followed by strict audit, clean factory approach and establishing accountability aspects, Mr. Wessels summed up. This will lead into a better planet for the next generation to live and protect Mother Nature, wherein colorants play a vital role, Mr. Wessels emphasised. He concluded his informative and inspiring address by stating, 'Sustainability and cost efficiency will go hand in hand, provided we invest in innovations in this area'.

Emphasising the need for saving water, 25% of which goes for fertilizers and insecticides usage, Mr. Wessels mentioned that non-recyclable polyester nylon or other synthetic is not much better from an environment footprint perspective. He narrated about the strict and stringent action taken by the Chinese Govt. including closure of many units in their 6 cities and Lianyungang area, where many colorant manufacturing units are situated. Our own processes need to drive minimisation of natural resources. Also, waste creation and its disposal cannot be overlooked in this regard, Mr. Wessels declared. To combat Chinese aggressive presence in the market, our products will have to ensure minimisation in its use of natural resource and also in the

Jt.Hon.Secretary Mr. Lalit Ganatra thereafter proposed a vote of thanks.

The meeting was followed by cocktails and dinner as in the past. ■

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## Utility Systems

K. Sahasranaman

### Introduction

Utilities are the backbone of every chemical process plant. Process plant operations are inconceivable without electric power, steam, water and air. Utilities influence both kinetics and thermodynamics of chemical reactions. Exothermic reactions need cooling and endothermic reactions need heating; heating and cooling have to be provided in the right measure for reactions to proceed in the desired direction and at desired speed. Distillation, the most common separation technique employed in the process plant, requires large quantities of heating and cooling in order to yield products of desired purity. Steam is required for steam-jet ejectors, which are commonly used for developing vacuum in plants processing heat sensitive substances. Instrument air is required for operating control valves which maintain the process parameters at the desired level and also for safe shutdown of plants. Electric power or compressed air is required to move fluids around in the plant.

Utilities not only affect production and quality, but also compromise process safety and plant reliability. For example, failure of cooling can cause a runaway situation in a nitration reactor. Loss of heating can lead to congealing and clogging in pipelines. Disruption in instrument air supply will cause loss of plant control. Loss of electric power cripples not only the plant but also utility systems and often leads to catastrophic consequences.

### Reliability

Reliable utility systems are a must for productivity, quality and safety of any chemical process plant. And this reliability has to be delivered at an economic cost. Reliability is usually built into utility systems at the design stage by providing adequate margins and judicious selection of equipment. Conceptualising utilities is a challenge because it has to be done at an early stage when process design is incomplete and information is imperfect. Utility systems have to be designed and engineered early because they are the first to be built and started up in the plant. Hardware like boilers, compressors, cooling tower are long-lead items and have to be ordered early. These are the main reasons why utility systems often have a design margin of 20-30% and sometimes as much as 40%.

While higher design margins improve reliability of utility systems, they are not desirable from the point of energy consumption. Overdesigned utility systems will operate at part-loads. Part-load operations are not

energy-efficient and will increase operating cost. Part-load operations are the norm in batch plants where utility demands are fluctuating. One way of addressing this situation is to provide modular design. For example: 2 compressors of 50% each instead of one 100% compressor. Or building 3x33% cells in the cooling tower instead of 2x50%. This will increase the capital cost and also the footprint. But more often than not the additional investment will pay for itself by the resulting savings in operating cost. Modular design also allows to plan for future expansion.

Design margins alone do not suffice for improved reliability. Equipment have to be sourced from trusted and proven suppliers, who will provide prompt support in the event of breakdowns. Adequate spares have to be stocked. Operators should be trained. Maintenance should be preventive.

### Cost

As mentioned before, reliability of utility systems comes at a cost that has to be kept as minimum as possible. Cost of reliable utility systems is a very significant percentage of the overall plant investment. Hence great attention should be paid at every stage – conceptualisation, design, engineering, procurement and installation – to ensure that reliability does not get compromised. Utility systems are also energy guzzlers. A lot of energy is required to raise steam, compressing air, pumping water to RO systems, refrigeration etc. Power and fuel constitute approximately 8% of the average operating cost in dyestuff industry. Together with water and other facilities, the total utility cost would be about 15% of the operating cost. Energy efficiency of utility systems is extremely important to reduce the operating cost. Energy-efficient equipment are expensive. This trade-off between cost, energy and reliability has to be understood and kept in focus at every stage of making decisions. Dyestuff and speciality chemical industries, which process high value chemicals, should be willing to pay a premium for improved reliability of utility systems. Loss of production and markets due to disruption in utilities can be punishing.

### Utility Generation

Cost of utilities depend significantly on how they are generated/sourced. Steam boilers can be fired by coal, oil, gas and even biomass. Steam from biomass is extremely attractive these days, with even the ash having nutrient value. But the raw-material supply is usually seasonal and needs to be tied-up carefully. Gas-



fired boilers are cleaner and do not require additional investment/operating cost on fuel storage and handling.

Water can be sourced from river or borewell. River water is subject to seasonal fluctuations and has more suspended matter than borewell water. Borewell water has much more dissolved solids than river water and does not exhibit quality variations. Cost of treated water depends considerably on the quality of input water and also on the method of treatment. Broadly there are two methods to produce treated water – Ion Exchange and Reverse Osmosis. Ion Exchange needs acid and alkali for regenerating the resin and also produces effluents that needs more chemicals for neutralisation. Reverse Osmosis needs more raw water and generates more effluents, as much as 20%, which cannot be easily disposed of because of very high solid content. RO also consumes more power than Ion Exchange. Following table compares the salient features of RO and Ion Exchange:

	Reverse Osmosis	Ion Exchange
Water Quality	Needs additional IE bed for BFW quality	
Operating Cost	Similar (Power)	Similar (Chemicals)
Maintenance Cost	Higher	
Replacement Cost	Higher	
Cleaning		Easier
Feedwater Quality	Needs microfiltration upstream	More tolerant of suspended solids
Effluent	More volume, less concentrated	Less volume, more concentrated
Recommended For	TDS > 500 ppm	TDS < 500 ppm

Refrigeration usually needs electrical energy, in which case its cost depends on the power price and compressor efficiency. Screw compressors can handle part loads more efficiently than reciprocating machines. Refrigeration can be produced more economically in case low grade thermal energy is easily available in the plant. But generating steam specifically for the purpose of vapour absorption refrigeration is not economical. Cost of plant air and instrument air also depends on power price and compressor efficiency. Cost of instrument air also depends on the type of dryer selected. Following table compares the operation of three major types of refrigeration compressors:

	Reciprocating	Screw	Centrifugal
Capacity	1 - 150 TR	50 - 200 TR	>300 TR
Energy	0.7-0.9 KW/TR	0.65 KW/TR	0.63 KW/TR
Control	Stepwise	Continuous	Continuous
Part-load Efficiency		Highest	

Installing DG sets for captive power generation is a significant way of improving reliability. But it doesn't come cheap.

## Utility Distribution

The distribution network should be robustly designed to ensure that utilities from the generation point are available at the consumer end at the required specifications. Availability of utilities at the correct specification is very important for plant performance. A steam-jet ejector will not be able to pull the required vacuum if the steam pressure at its inlet is lower than specified. This will in turn severely impair plant performance. Lower than specified steam pressure will impact the thermal performance of heating systems. Poorly engineered distribution networks not only result in delivery of utilities with incorrect specifications, but also result in energy losses and hence higher operating costs. Main utility headers should be sized liberally to minimise pressure losses.

Good engineering practice is extremely important for utility networks, especially steam networks. Steam piping should continuously slope towards the consumers and have no intermediate pockets to avoid accumulation of condensate.

Condensate accumulation in steam lines is the primary reason for water hammering, with potentially dangerous consequences to both property and personnel. Water hammering occurs when cold steam piping is suddenly started up without proper drainage of accumulated condensate. The forces developed during water hammer are tremendous and pipe supports should be

suitably designed to withstand them. Water hammer may also occur silently without the knowledge of plant personnel. Two-thirds of all component failures in steam system can be attributed to water hammer. Some recommended good engineering practices for steam distribution network are:

- Headers should have minimum slope of 12 mm for every 3 m.
- Steam traps should be provided on headers at intervals of 30-50 m and also at every low point.
- Steam headers should be adequately supported to avoid sagging and formation of pockets.
- Condensate drip legs and steam traps should be liberally sized.
- Eccentric reducers should be provided in steam headers.

Return and reuse of steam condensate is very important to improve the plant economics as it conserves both heat and water.

Poor insulation and leakages are common causes for energy and material loss in distribution networks. Insulation should be scientifically designed and installed, but cannot be a "fit and forget" practice. It requires regular and maintenance to prevent deterioration due to wind and rain. Periodic





replacements of valve packings and flange gaskets and regular maintenance of steam traps are essential to reduce steam losses.

### Batch Operation

Batch operations are a rule in dyestuff and speciality chemical industries and this poses a special challenge to utility systems as they have to cope with sudden and fluctuating demands in utilities. Energy optimisation in batch systems is also difficult as most techniques and methodologies are designed for “steady-state” operating conditions. Frequent start and stop of utility systems wastes energy and also increases wear and tear thereby reducing reliability. Part-load operations are often energy-inefficient. Some ways and means of addressing this challenge are:

- Staging of batches to reduce load cycling and even

out utility demands.

- Generous sizing of water storage, steam accumulator, air receiver to create buffer for fluctuating demand.
- Installing variable speed drives for pumps, compressors and fans.
- Advanced controls for load management.

### Summary

Every chemical process plant, irrespective of its size, must pay adequate attention to utility systems as it affects productivity, quality and safety. Reliability in utility systems comes at a cost. Cost and reliability of utilities depend on how they are generated and distributed. Batch operations pose special challenges to utility systems.

*Mr. K. Sahasranaman holds a B. Chem. Engg. from UDCT and an M. Tech. from IIT-Bombay as well as a Diploma in Finance Management from Mumbai University. He has over 37 years experience in process design and engineering, commissioning and troubleshooting of chemical plants, of 27+ years were with ThyssenKrupp Industrial Solutions (India) Private Limited (formerly Uhde India Private Limited). He is currently an independent consultant in areas of process design and engineering, energy, utilities and safety. He has published over 50 articles in Indian and international journals. He can be reached at k.sahasranaman@gmail.com.*



- Consequent upon the implementation of the GST in the country, our Association is registered under GST with GSTIN No. 27AAATT5558N1ZS and Service Accounting Code (SAC) :999599, which we request our members to quote, while making any payment to the Association.
- Our President Shri Jitendra Patel and Imm. Past President Shri Janak Mehta called on the incumbent Secretary, Shri Rajeev Kapoor of the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, GOI on 26th July 2017 in New Delhi and apprised him of the various issues connected to the Colorants industry and requested for his support and co-operation. Shri Kapoor assured of his assistance, wherever possible.
- DMAI made a representation to the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, GOI on 3rd August 2017 regarding problems faced by the Colorants industry as regards REACH regulations, seeking Government support and co-operation in the matter.



## Low VOC Paints

**Sambit Roy**

Regional Director Marketing & Sales - BU Pigment, India Sub Region, Clariant Chemicals (India) Ltd.

**A**s the green movement forges full-steam ahead, more and more companies are offering paint labeled either Low VOC or No VOC. While these labels sound positive, few people actually know what they mean. Choosing low-VOC or zero-VOC paint is an important step toward turning your interior or exterior paint job “green.” And with little to no odor, and performance and price that rival conventional products, paint manufacturers increasingly are producing low-VOC paints.

VOC stands for Volatile Organic Compound. VOCs are found in a host of building materials and are partially responsible for that new paint smell. Unfortunately these unstable chemicals let off gasses that are very harmful to people and the environment.

The term "non-toxic" is used here in its broadest sense. With paints and finishes, it's more a matter of degree. Even Zero-VOC formulations contain some small amounts of toxins. Here are three general categories of non-toxic (or low-toxic) paints: Natural Paints, Zero VOC, and Low VOC

**Natural Paints and Finishes** - These are paints made from natural raw ingredients such as water, plant oils and resins, plant dyes and essential oils; natural minerals such as clay, chalk and talcum; milk casein, natural latex, bees' wax, earth and mineral dyes. Water-based natural paints give off almost no smell. The oil-based natural paints usually have a pleasant fragrance of citrus or essential oils. Allergies and sensitivities to these paints is uncommon. These paints are the safest for your health and for the environment.

**Zero VOC** - Any paint with VOCs in the range of 5 grams/liter or less can be called "Zero VOC", according to the EPA Reference Test Method 24. Some manufacturers may claim "Zero-VOC's", but these paints may still use colorants, biocides and fungicides with some VOC's. Adding a color tint usually brings the VOC level up to 10 grams/liter, which is still quite low.

**Low VOC** - Low VOC paints, stains and varnishes use water as a carrier instead of petroleum-based solvents. As such, the levels of harmful emissions are lower than solvent-borne surface coatings. These certified coatings also contain no, or very low levels, of heavy metals and formaldehyde. The amount of VOCs varies among different "low-VOC" products, and is listed on the paint can or MSDS. Paints and stains, to

meet EPA standards must not contain VOCs in excess of 200 grams per liter. Varnishes must not contain VOCs in excess of 300 grams per liter. As a general rule, low VOC paints marketed by reputable paint manufacturers usually meet the 50 g/L VOC threshold. Paints with the Green Seal Standard (GS-11) mark are certified lower than 50 g/L (for flat sheen) or 150 g/L (for non-flat sheen).

Low VOC paints will still emit an odor until dry. If you are particularly sensitive, make sure the paint you buy contains fewer than 25 grams/liter of VOCs. Asian Paints, Berger Paints, Kansai Nerolac and Akzo Nobel etc. Have already launched low VOC paints in Indian market. Though there is no legislation on VOC content in India but hopefully it will come in near future.

### Benefits

- **Health:** Reduced toxins benefit everyone, including those with allergies and chemical sensitivities.
- **Environment:** Reduces landfill, groundwater and ozone depleting contaminants.
- **Effective:** Low-VOC products perform well in terms of coverage, scrubability and hideability (covering flaws on previous coats).
- **Water-Based:** Easy cleanup with soap and warm water.
- **Little or No Hazardous Fumes:** Low odor during application; no odor once cured. No off-gassing. Painted areas can be occupied sooner, with no odor complaints.
- **Not Deemed Hazardous Waste:** Cleanup and disposal greatly simplified

Volatile Organic Compounds (VOCs) are a large group of carbon-based chemicals that easily evaporate at room temperature. While most people can smell high levels of some VOCs, other VOCs have no odour.

**Volatile organic compounds (VOCs)** are organic chemicals that have a high vapour pressure at ordinary room temperature. Their high vapour pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air. GS-11 standard considers 280°C boiling point where as 250°C is for European DIN standards.

### VOCs health hazards

Volatile organic compounds (VOCs) are solids and liquids that convert easily to gas or vapor at room



temperature. VOCs are contained in many paint products and have been linked to a variety of health problems—watery eyes, headaches, asthma, respiratory diseases and cancer.

### VOC regulations

Current EPA regulations limit VOCs to 250 grams/liter in latex paint, and 380 grams/liter in oil-based paint. Low-VOC paints, now available from most major manufacturers, clock in at less than 50 grams/liter in flat paints, and 150 grams/liter in gloss paints. Some go even lower, hitting 25- or even 10-gram/liter benchmarks.

A paint that has 5 grams or less/liter can claim “zero-VOC” status.

A range of pigment preparations for new generation low VOC water-based decorative paints are now available.

A comprehensive range of binder-free aqueous pigment preparations for low VOC water-based decorative paints

- Manufactured without using alkyl phenol ethoxylate (APEO) additives
- Suitable for manual and automatic dispensing equipment
- Extra narrow tolerances for exact color reproduction

Available are a range of binder-free pigment

preparations manufactured without using ethoxyalkyl phenol (APEO) additives. These multipurpose preparations are compatible with water-based and solvent-based decorative coatings. When used in manual or automatic dispensers, these multipurpose pigment preparations show excellent accuracy and reliability when being poured or pumped.

These are specially developed for the modern low VOC decorative coatings. They are regularly analyzed according to the official VOC test norm DIN EN ISO 11890-2 (EU directive 2004/42/EC).

A range of aqueous binder free pigment preparations, manufactured in India, is available based on non-ionic / anionic wetting and dispersing agents. They do not contain APEO additives. These aqueous pigment preparations are compatible with all kinds of water based paints. These pastes are impermissible. Indian paint manufacturers are voluntarily following IGBC standards based on GS-11 standards. CC FP-LVOC pastes are conforming to GS-11 standards.

Reducing the concentration of VOCs indoors and outdoors is an important health and environmental goal. Consumers can help speed the development and lower the cost of non-toxic paints by choosing products which contain fewer hazardous ingredients. Choosing to use non toxic, environmentally safe paints and stains can also greatly reduce the amount of toxins in the air, water and earth. ■

*Sambit Roy is the Regional Head BU Pigments – India Region, Clariant, since Jan 2014. He joined Clariant in Jan 2002 from Kesoram Industries B K Birla Group, where he was the Head of Production. Sambit is a Chemical Engineer from REC – Jaipur and has rich experience of over 19 years in the field of Colorant Applications, Business Development and Sales & Marketing. He is credited with two patents on 'Encapsulation of Pigments'. He has successfully completed various international assignments for Clariant's Global Key Accounts.*

*He is regarded as a valued team player who performs to his true capabilities and always strives to reach high standards in his work area and also motivates his team to follow suit. He has a long term vision with clearly defined strategy aimed at achieving the company goals.*

## Forthcoming Events



### HALF YEARLY MEETING AT MUNNAR TEA COUNTRY RESORT, KERALA

We are pleased to inform our members that the Managing Committee, in its last meeting held on 21<sup>st</sup> September 2017, decided to hold our Half Yearly Meeting at Munnar Tea Country Resort, Kerala from 11<sup>th</sup> to 14<sup>th</sup> January 2018. We have already circulated the details for your information and further action. We request large participation from our members with their families for this eagerly awaited gala event.

## Seminar on 'Export /Import under GST Regime'

A Seminar on 'Export/Import Under GST Regime' was organized by Basic Chemicals, Cosmetics & Dyes Export Promotion Council (Chemexcil) on 26th July 2017 in Mumbai for member exporters.



**Experts making presentation**

At their instance, many of our members attended the seminar, which was addressed by experts on subjects like GST regime on LUT/ BOND/ Bank Guarantee, refunds, fate of export promotion schemes etc. The information imparted at the Seminar would be very useful to the participants in the current scenario. It is worth mentioning that Chemexcil had organized a similar Seminar earlier on GST Regime on 9th May 2017, which was also attended by our members.



**DMAI Past President Mr. Ajay Kadakia & 2nd Vice President Dr. Shavak Bhumgara on the dais with other Dignitaries**



**Shri Satish Wagh- Chairman Chemexcil welcoming Dr. Vijay Risi, Addl C...**



**Mr. Ajay Kadakia- Past President DMAI & Vice Chairman, Chemexcil welcoming Shri. K.M Harilal, Dy. DGFT.**



**Question Answer in Session**



**Shri S.G Bharadi-ED welcoming Shri Joshua**

## An Interactive meeting arranged by DGFT on 24th August 2017

An Interactive meeting was arranged by DGFT on 24th August 2017 in Mumbai for a field study of the impact of GST on Foreign Trade and consequential changes required in FTP/HBP after introduction of GST, wherein our Executive Secretary and representative of a member unit participated. DMAI subsequently submitted a representation to the Addl. DGFT, New Delhi with regard to the difficulties experienced by the members, and clarifications regarding additional burden of interest towards blockage of working capital for payment of GST for exporters, for information and necessary redressal.

# Testing for ZDHC MRSL

## NimkarTek Detox Laboratory

NDL is an ISO/IEC-17025 accredited laboratory located at Mumbai



Responsible colorant manufacturers must ensure conformance to the ZDHC MRSL for contamination limits



AP / APEOs

Heavy Metals

Phthalates

VOCs

Chlorobenzenes (COCs)

Halogenated Solvents

Banned Amines

Chlorophenols

PAHs



NimkarTek Detox Laboratory (NDL) offers testing of the above ZDHC MRSL analytes in dyes & pigments to help you provide Self-declarations to your customers and also list your products on the ZDHC Chemical Gateway (<http://gateway.roadmaptozero.com/>)

For your queries, contact:

anagha.nimkar@nimkartek.com | +91 9819641527

prasad.pant@nimkartek.com | +91 9920533535

Send your samples to:



**NimkarTek Technical Services Pvt. Ltd.**

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