



# First MELAMINE Production in Trinidad and Tobago

On Thursday 27th May 2010, Methanol Holdings (Trinidad) Limited (MHTL) achieved first production on the first of two Melamine trains of its multi-product AUM complex, with startup of the 2nd train scheduled within the next few months. Once fully operational, both trains would have a combined rated capacity of 60,000 Metric Tonnes per annum and would be among the largest melamine plants in the world.

This startup marks the final phase of MHTL's US\$ 1.7 billion mega project known as the AUM Project, which comprises a diversified petrochemical complex consisting of seven (7) plants which manufacture Urea Ammonium Nitrate (UAN) 32% solution and Melamine using feedstock from integrated urea and ammonia plants.

MHTL will export approximately two hundred and fifty (250) containers per month to North America, South America and Europe via the Ports of Point Lisas and Port of Spain. In addition, some production from these plants will be targeted for the local market as MHTL seeks to generate downstream opportunities for the manufacture of higher value-added products domestically in applications such as laminates, adhesives, surface coatings and concrete plasticizers.

Apart from the potential use of melamine in local industry the start up of these plants will have significant impact on the local economy. MHTL's employees are 100% local and have full control of all production, finance and marketing operations. Apart from the internal workforce, MHTL's melamine operations require a wide range of supplies and services from local companies on an on-going basis including pallets and packaging materials, bagging and warehouse operations, road transportation and export logistics support.

MHTL's entry into melamine production also forms part of the company's on-going diversification efforts to pursue other products downstream of the primary chemicals – methanol and ammonia, which at the same time can provide opportunities for local entrepreneurs to utilize these products in the manufacture of value-added consumer goods. In the coming months, MHTL is planning to host a business symposium which will bring together technology providers, business entities and local entrepreneurs interested in developing these industries.

MHTL remains a leader in the local petrochemical industry, maintaining consistent profitability and returns to its shareholders over the last fifteen (15) years. The company continues its track record of global competitiveness, as it pursues a strategy of profitable growth and diversification.

## AUM Project Milestones

- Sod Turning Ceremony - May 4th, 2006
- First Ammonia Production - April 14th, 2009
- First UAN Production - January 18th, 2010
- First Melamine Production - May 27th, 2010

## AUM PROJECT

MHTL wishes to thank the following companies and agencies for their invaluable contribution in making the AUM Project a reality.

Project Team		
Industrial Plant Services Limited	Man Ferrostaal Ag	Proman Ag (Trinidad) Limited
Contractors		
ADDS Speciality Services Ltd.	D. Rampersad & Co. Ltd	Paramount Transport & Trading Co. Ltd.
Anti-Corrosion Technical Ltd.	Damus Ltd.	Pres-T-Con Ltd.
C & Z Engineering Services Ltd.	Franklyn & Errol Electrical Services Co. Ltd.	Powerlinx Engineering Services Ltd.
Catalyst Services Trinidad Ltd.	Geotech Associates	Super Industrial Services Ltd.
Climate Control	Jokhan General Contractors Ltd.	Weldfab Ltd.
Control Technologies Ltd.	Non Destructive Testers Ltd.	Yorke Structures Ltd.
Sub-Contractors		
ANSA Technologies	Pipe & Welding Inspection Consultants Services Ltd.	Safety Environmental & Industrial Training Systems
Consulting Engineers and Associates Ltd.	Rose Environmental	Team Industrial Services Inc.
Hydratight		Trintoplan Consultants
Kaizen Lab		
External Fabrication Shops		
D. Rampersad & Company Ltd.	Kanson's Engineering Works Ltd.	Super Industrial Services Ltd.
Damus Limited	Pres-T-Con Ltd.	Weldfab Ltd.
Jokhan General Contractors Ltd.	Yorke Structures Ltd.	
Other Stakeholders		
Caribbean Nitrogen Company	Ministry of Energy and Energy Industries	Nitrogen 2000 Unlimited
Customs Authority of Trinidad & Tobago	Ministry of Trade and Industry	PLIPDECO
EMA	National Energy Corporation of Trinidad & Tobago	T&TEC TIDCO
Government of the Republic of Trinidad & Tobago	National Gas Company of Trinidad & Tobago	Town & Country Planning Division WASA

## Local Contractors - Operational Phase

Company	Role
Transaw Limited	Manufacture of Pallets
Trinidad Packaging Limited	Manufacture of Bags
Premier Customs Brokerage	Export Logistics & Customs Brokerage Service
Paramount Transport & Trading Company Limited	Local Ground Transportation
Ramdash Transport Company Limited	Local Ground Transportation
Super Industrial Services	Warehouse Bagging
K S Chinpire Contracting Services Limited	Warehouse Forklift Operations

## Setting the Stage for Further Local Downstream Manufacturing

## Preparing for export to North America, South America and Europe



Super Industrial Services (SIS) Operator at the bag filling station



IPSL staff scanning product out of inventory, while Premier Customs Brokerage staff witness the operation



KS Chinpire forklift operator loading a container under the guidance and supervision of IPSL staff



Premier Customs Brokerage staff witness the closing of a container for delivery to the Port for shipping



1000kg bag

## What is Melamine?

Melamine is a white crystalline powder made from urea and ammonia. More than 95% of melamine production worldwide is used as a raw material to make amino-formaldehyde resins, which are then processed and used in a variety of applications such as:



### 1. Laminates

Laminates are produced by compressing either paper or cloth with the resin onto a substrate or core. Melamine is used as a binding agent that makes materials strong, heat resistant and water resistant. The main products from this application are laminate floorings, furniture tops, kitchen and bathroom counter tops and wall panelling.

### 2. Wood Adhesives

Melamine-based wood adhesives are used in a variety of products including plywood, particleboard, medium density fibreboard (MDF) etc. This is done by combining woodchips and other wood waste with melamine resins which is then compressed to form "manufactured wood". This is then used in furniture manufacture and building construction.

### 3. Paper & Textiles

Melamine resins are also used to increase wear and water resistance in paper and textiles making them more resilient. For example some currency bank notes are coated with melamine formaldehyde resins to improve their durability; this same type of application is used in protecting wallpaper surfaces, pictures, maps etc. Melamine resins can also be used to make textiles wrinkle-free and stain resistant.

### 4. Flame Retardants

Melamine derivatives are used to enhance the flame-retardant properties of coatings, textiles and plastics since melamine absorbs heat when exposed to heat/flames.

### 5. Concrete Plasticizers

Melamine resins can be used as "plasticizers" in concrete to improve the strength, flow and flexibility. It also reduces concrete drying time and pump and pump line deterioration.

### 6. Surface Coatings

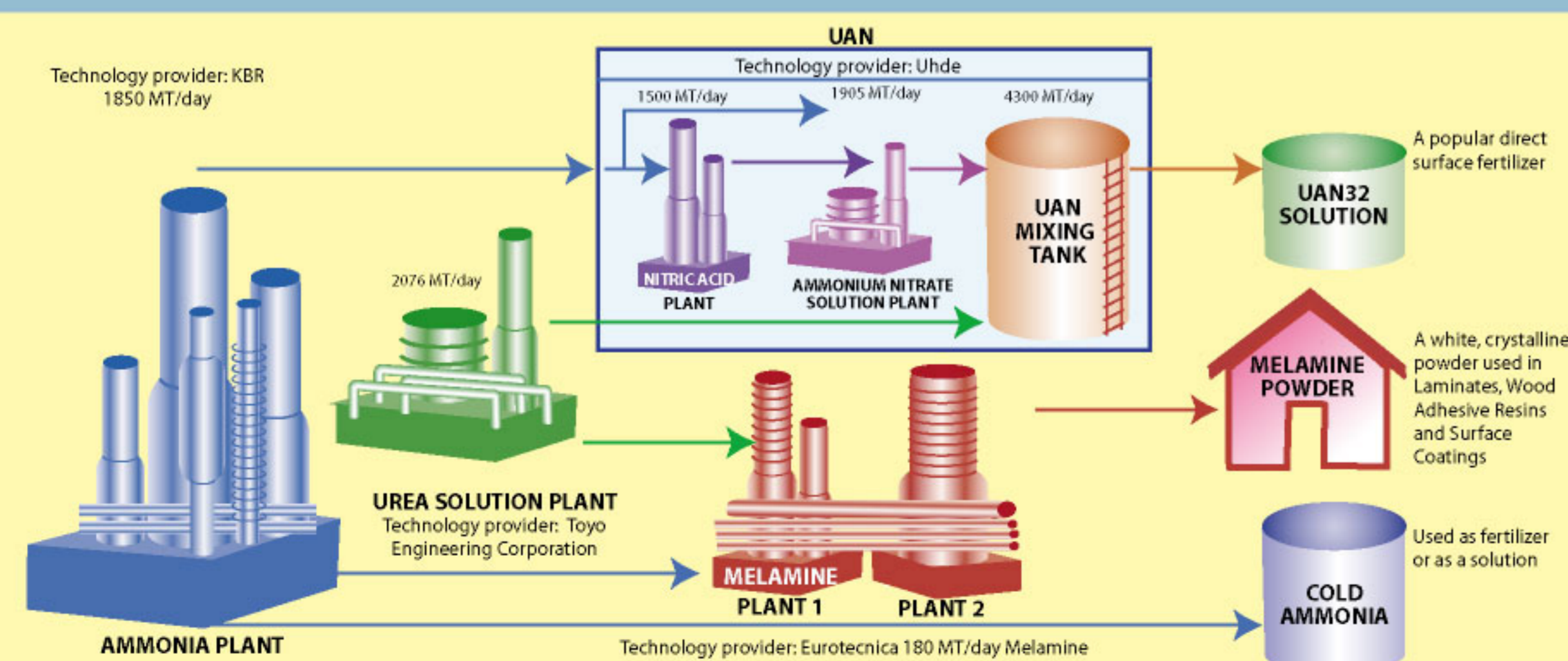
Melamine Formaldehyde (MF) resins are used to produce highly durable coatings such as:

- Automotive paints and coatings
- Varnishes and coatings for metal food and beverage containers
- Coatings for metal office furniture
- Electrical coatings

These coatings offer strong resistance to wear and scratches, long-lasting colour retention and a glossy finish.

### 7. Kitchen and Tableware - Moulded Compounds

Moulded melamine can be used in items such as tableware, utensils and handles for pots and pans.. Its physical properties offer flexibility in design and are intrinsically safe. These moulded items are dishwasher and microwave safe, will not break or transfer heat and can be produced in a range of colours and decorative finishes.



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