



## PSE-LAB EDITORIAL: THE HDA PLANTS FLOWSHEET

According to flowsheets we were provided by insiders at Politecnico di Milano, each HDA plant is affected by the following in- and out-going flowrates:

	Flowrate <sup>1</sup>	
<b>Toluene</b>	21.28	BUY
<b>Benzene</b>	20.00	SELL
<b>H<sub>2</sub> (95%)</b>	30.78	BUY
<b>CH<sub>4</sub> (5%)</b>		
<b>CH<sub>4</sub> (71%)</b>	29.85	BURN
<b>H<sub>2</sub> (29%)</b>		
<b>CH<sub>4</sub> (91%)</b>	1.67	BURN
<b>H<sub>2</sub> (5%)</b>		
<b>Benzene (4%)</b>		
<b>Diphenyl (impure)</b>	0.54	SELL/ BURN

We completed our analysis of chemical compounds with the following table:

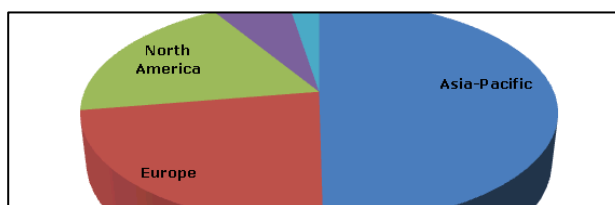
	Heat of combustion <sup>2</sup>
<b>Benzene</b>	3 136 000
<b>Propylene</b>	1 926 200
<b>Toluene</b>	3 734 000
<b>Hydrogen</b>	241 820
<b>Methane</b>	802 620
<b>Diphenyl</b>	6 248 000

(<sup>1</sup>) The flowrate is the molar flow rate, expressed in kmol/h

(<sup>2</sup>) The heat of combustion is expressed in kJ/kmol

## WILL THE NEW PLANTS BY POLITECNICO AFFECT THE GLOBAL MARKET?

The recent construction of 35 HDA plants by Politecnico di Milano has hit the headlines in the last few weeks. According to internal sources, production will start this week.



The 35 plants will result in an overall productive capacity of 700 kmol/h, or about 440 thousand t/y. Furthermore, it is not guaranteed that the plants will run full-time, even in the absence of production problems. From an analysis of historical trends, we forecast that HDA plants will run about 50÷60% of the time.

On the other hand, world toluene and benzene production respectively exceed 20 and 42 million t/y. Therefore, despite the impressive construction, it appears likely that the market of the commodities will not be significantly affected in the long term.

### FINANCE

Average weekly figures:  
**15/10-21/10 week**

Crude oil <sup>1</sup>	56.41 (+19.4%)
Benzene <sup>1</sup>	144.17 (+0.9%)
Toluene <sup>1</sup>	96.04 (+9.6%)
Propylene <sup>2</sup>	849.04 (-2.6%)
Diphenyl <sup>2</sup>	635.04 (+1.2%)



**22/10-28/10 week**

*Forecasts by OPEC:*

Crude oil <sup>1</sup>	100.63 (+78.4%)
------------------------	-----------------

*Forecasts by our expert:*

Benzene <sup>1</sup>	161.24 (+11.8%)
Toluene <sup>1</sup>	157.51 (+64.0%)
Propylene <sup>2</sup>	957.67 (+12.8%)
Diphenyl <sup>2</sup>	699.37 (+10.1%)

(1) EUR per bbl (159 L)

(2) EUR per metric ton

### SPONSORED CONTENT – Politecnico di Milano

We are proud to publish the list of teams of Process Engineers that have been hired by Politecnico. Production has started, and we are also openly publishing the list of plants that ran last week.

Team DNA1	NO	LC&VB12	NO	triumvirate23	YES
TeamBR2	NO	Federiciani13	NO	Team24	NO
BenzenEye3	YES	Tugas Inc14	YES	Team25	NO
T4square4	YES	BrasMex15	YES	lekei26	YES
Triskelis Team5	YES	C&F Team16	YES	G&L.M27	YES
I diavoletti di Maxwell6	YES	E-Ace Ports17	YES	Team di Olcoroco28	YES
K8CREW7	YES	Team18	YES	Team29	NO
D€G8	YES	TeamPro19	YES	Argenspaña30	YES
FETA9	YES	P.K. Engineering20	YES	Team31	NO
Team110	YES	Team21	YES		
F&V Engineering11	NO	medatech22	YES		

To enter the cockpit and manage your plant, please visit [tiny.cc/pse18w4](http://tiny.cc/pse18w4)