In this reactor the remaining acetone from the process is also iminized and further hydrogenized.

The reactor is equipped with a central mixer containing two mixing blades, internal cooling coils for the exothermic reaction and a refrigeration chamber.

The reaction is catalysed by means of a filtering system, which prevents the dragging of the catalyser.

The outlet flow of the reactor is constituted of approximately:

- 70 per cent MIPA
- 21 per cent H_2O
- 9 per cent impurities (non-reacted acetone, DIPI, DIPA, Isopropanol, etc.).

This goes to a gas separator where two new flows are generated. The vapour phase is condensed to recover MIPA and the remaining ammonia and incondensibles are eliminated.

The liquid flow as well as the condensed one are directed to ammonia shaft (C-2).

In this column the excess ammonia is recovered and redirected to the reactor. The main current (MIPA, H_2O, non-reacted acetone and other impurities) is then sent to the MONO column (C-4) where MIPA will be extracted at the surface with a purity rate of 99 per cent. This resulting MIPA will initially be sent to daily tanks (V-18 and V-19) and subsequently to the final product tanks (V-25 A-B).

The flow of the MONO shaft (C-4) is concentrated in tank (V-14) and is subsequently directed to tank (V-16) where it will be reprocessed in the "BATELADA" shaft (C-3) for the recovery of acetone and MIPA.

Observation

In reaction 3 the formation of Diisopropylamine (DIPA) is undesirable, and for that reason the excess ammonia is utilized in order to divert the reaction towards the formation of MIPA.

5.2 Material balance sheet

The main facts dealing with the production process were provided subsequently by QUIMICA DA BAHIA S.A. and are shown in Annex 1.A.