

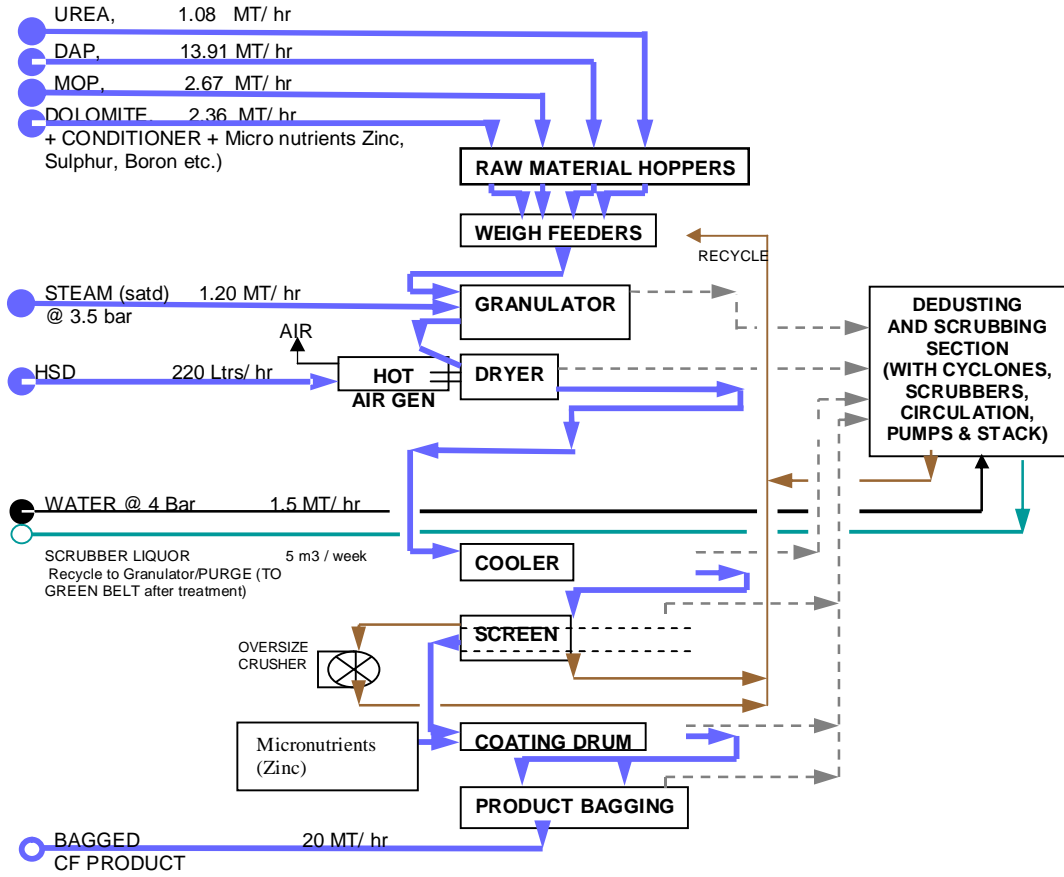
WASTEWATER RECYCLING IN CUSTOMISED FERTILIZERS PLANT

BRIEF DESCRIPTION OF THE PROCESS:

The solid raw materials like DAP, MOP, Urea, Filler compounds like Dolomite, clay etc and Micronutrients like Zinc, Boron, Sulphur etc are proportioned (weighed) and premixed in a paddle mixer and fed to granulation drum (a rotary drum unit) where agglomeration is initiated. In the granulator steam and/or water is added to provide sufficient liquid phase and plasticity to cause the dry raw materials to agglomerate further into product-size granules. The moist and plastic granules are dried, in a rotary drum-type, HSD-fired dryer and screened to remove the product-size fraction. Cooling is performed in a rotary drum-type unit that is very similar to the rotary dryer. The oversize material is crushed and recycled to the granulator along with the undersize fraction. The product size fraction is passed through a coating drum where it is coated with anti caking agent and micronutrients like Zinc is added to the fertilizer and then is sent for bagging. The process flow diagram is shown in Annexure I. The process air from various equipment of the plant is taken to de-dusting and water scrubbing system and after thorough cleaning it is vented to atmosphere through stack. The scrubbed liquor is recycled to the granulator.

Pollution control section:

The plant contains stack and pollution control equipments for guarding the environment and to avoid material loss. The dryer air ($25,000 \text{ m}^3/\text{hr}$) and the cooler air ($25,000 \text{ m}^3/\text{hr}$) are taken to dedicated dust scrubbers (316 SS) through dedicated cyclones for removal of dust and after scrubbing it with circulating water in scrubber, the dust free air is sent to stack (30 m high). All the collected dusts are recycled back in the process. The Scrubber liquor is fed to granulator.



CUSTOMISED FERTILIZER PROCESS FLOW (TYPICAL)