

Report on Incident of fire and multiple explosion at M/s Avinash Drugs Ltd., L-5,MIDC, Tarapur on 01/10/2004

Preliminary Report on Incident

Location	Tarapur Industrial Area, Boisar, Distt. Thane
	Avinash Drugs (Chemicals) Limited, L-5, MIDC Tarapur
Incident Date	01.10.2004 (Afternoon)
Contact Persons at the factory	Mr. Zakir Shaikh- Plant Manager Mr. Manoj Vyas- Administration Mr. Atish Singh-Chemist Mr. B.K. Jha (Chemist) present at the time of incidence.
Product	3 Chloro 4 fluoro Aniline, 2-4 Dichloro fluoro Benzene, para fluoro Aniline, Meta Dichloro Benzene
Raw Materials	3,4 Dichloro Nitro benzene, 2-4 Di-nitro chloro benzene, Dimethyl sulphoxide, nitro benzene, mono chloro benzene, potassium fluoride, formic acid, acetic acid, caustic, iron powder, liquid chlorine gas, meta nitro chloro benzene, para nitro chloro benzene, PEG 400.
Description of Incident	
Incident Type	Fire, followed by multiple Explosions
Short description (As per the information given by Industry representatives at the site)	Distillation hot Residue from the bottom of a Reaction kettle was being drummed up into MS and HDPE empty drums.
	Smoke/vapour started emerging out of one of

	the MS drums.	
	While shifting the other residue filled drums away from the smoking MS drum, one of the HDPE drum cracked and the residue oozed out.	
	This residue caught fire and the fire spread rapidly all over in an uncontrollable manner.	
Possible cause (to be confirmed by competent authorities i.e. DISH)	Development of static spark due to friction while shifting the drums which ignited the hot flammable residue.	
Location	Distillation area	
Plant Type	Chemical Manufacturing	
Activity	Synthesis	
Unit Operation	Chemical Reactions; Phase separations; Centrifugation; Distillation	
Reactions Involved	Halogenation	
Substances Involved	2,4 Dinitro Fluoro Benzene (DNFB) + Dinitro Chloro Benzene (DNFB) (Residue)	15
	3,4 Chloro Fluoro Aniline (CFA)	6
	Hydrofluoric Acid	1.5kL
	Nitrobenzene	25
	Potassium Carbonate	1
	Potassium Fluoride	3
	Potassium Permanganate (KMnO4)	?
	Sodium Hydroxide Flakes	3
	Sulphonal (Solvent)	5
	Dichloro Fluoro Benzene (DCFB) (Finished Product)	14

	Furnace Oil	18KL
	Chlorine Gas	5
	Dimethyl Sulphoxide (DMSO)	3
	Aqueous + Organic Emulsion (Waste)	7
	HDPE 200 lts drums	? Nos.
	HDPE drums 35 lts	? Nos.
Material Damage	Equipments in Halogenation and Distillation Area;	
	Civil Building. for Halogenation Area;	
	Mechanical structures in Distillation Area	
	Damage in Rs. is being estimated	
Weather Conditions	South Westerly Medium to high velocity wind.	
	Ambient Temperature above 30oC	
Consequences to Persons	No Injury to any person and without lost workdays	
Production Capacity Loss	Indefinite time	
Environmental Contamination	Atmospheric- due to uncontrolled emission of Carbon, Chlorine, fluorine, Oxides of Nitrogen, Sulphur Dioxide (Quantification difficult)	
	Water- due to fire fighting. (Appx. 80nos, 10kL)	
	tankers provided water for fire fighting. (total appx. 800kL)	
	Soil- soil contamination on plant premises. (appx. 75m3)	
Size of Affected Area	~10,000-15,000 sq.m. +	
Nature of Affected Area	Victim unit + Adjacent utensil manufacturing unit	
Media Coverage	Yes , Extensive, by different agencies	
Public Impact	Marginal	
Authorities Involved	Revenue, Police, Fire brigade, MIDC, MPCB;	
Further Description, Comments, and Actions	Apart from debris of fire containing burnt and unburnt chemical material there are many unlabelled drums and packages containing solid wastes on the premises.	

	Out of 6 nos, 1 ton each Chlorine Cylinders in the Chlorine Bank, 3 cylinders were full and 3 were empty at the time of incidence. Status of 3 nos. full cylinders is yet to be confirmed.
	75 drums of 200 lt of residue (HW) stored in premises. Plot open area along the boundary on two sides (upwind) has been
	used for storage of chemicals and HW (residue) Surrounding Area inspected by Prof. Chaphekar, for damage to flora. No visible damage observed.
Author of Report	Dr. Chaphekar, Shri Hemant Rane, Dr. Ajay Deshpande
Date of Report	02.10.2004
Note	The above report is based on the physical observations and discussions with the factory officials. A detailed report is being submitted shortly.