

Interpretation of Sample results taken from SIPCOT Canteen Road in SIPCOT Cuddalore

Date of Sampling: 9 August 2010

Time of Sampling: 9.56 pm

Location: Downwind of Aurobindo Pharma on the SIPCOT Canteen Road.

Wind direction: South to North

Description of sampling conditions and location: The sample was taken during a routine pollution patrol exercise of the SIPCOT Area Community Environmental Monitors in SIPCOT Cuddalore. According to their report, there was a strong acid like odour noticed from the area which caused headache, eye burning, throat irritation among the monitors. The monitors also reported white smoke from the factory.

Results:

- 6 chemicals were found – Acetone, Methylene Chloride, Ethyl Acetate, Toluene, n-Butyl Acetate and Tetrachloroethene.
- 2 chemical were found to exceed United States Environmental Protection Agency's health based screening levels, or other relevant safety limits. These chemicals were Methylene Chloride and Tetrachloroethene.
- Methylene Chloride and Tetrachloroethene are both known to cause cancer in humans and/or animals. Methylene Chloride was found 23.2 times and Tetrachloroethene was found 3.6 times above safe levels prescribed by the United State Environment Protection Agency Region 6 (US EPA).
- Out of the 6 chemicals found – all chemicals affect the eyes and skin; 5 chemicals affect the respiratory system; 4 chemicals affect the Central Nervous System; 2 chemicals affect the liver and kidneys and one chemical affects the heart and Cardiovascular System.

S No.	Name of the Chemical	Odour	Levels detected (ug/m3)	Health based Screening levels (ug/m3)	Number of times exceed the screening levels (approx)	Symptoms	Target Organs	Carcinogen
1.	Acetone	A fragrant, mint-like odour	100	370 (EPA Region 6 Screening Level)	--	Irritation eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eyes, skin, respiratory system, central nervous system	No
2.	Methylene Chloride	A chloroform-like odour	95	4.09 (EPA Region 6 Screening Level)	23.22	Irritation eyes, skin; weakness, exhaustion, drowsiness, dizziness; numbness, tingle limbs; nausea; [potential occupational carcinogen]	Eyes, skin, cardiovascular system, central nervous system Cancer Site [in animals: lung, liver, salivary & mammary gland tumours]	Yes
3.	Toluene	Sweet pungent benzene like odour	12.0	--	--	Irritation of eyes, nose, weakness and exhaustion, confusion, euphoria, dizziness, headache, dilated pupils and tears to eyes, anxiety, muscle fatigue, insomnia, dermatitis, liver injury, kidney damage	Eyes, skin, respiratory system, Central nervous system, liver and kidney	No
4.	n-Butyl Acetate	A fruity odour	410	--	--	Irritation eyes, skin, upper respiratory system; headache, drowsiness	Eyes, skin, respiratory system, central nervous system	No

5.	Tetrachloroethene / Trichloroethene	A chloroform-like odor	12	3.3 (EPA Region 6 Screening Level)	3.6	Irritation of eyes and skin; headache, visual disturbances, weakness and exhaustion, dizziness, tremor, drowsiness, nausea, vomiting, dermatitis, liver injury	eyes, skin, respiratory system, heart, liver, kidneys	Yes potential occupational carcinogen Cancer Site [in animals: liver & kidney cancer]
6.	Ethyl Acetate	A fruity like odour	32	--	--	Irritation eyes, skin, nose, throat; narcosis; dermatitis	Eyes, skin, respiratory system	No