

# SIPCOT Area Community Environmental Monitoring

No 72/7, Nethaji Road, Manjakuppam, Cuddalore – 607001

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## Analysis report of the air sample taken near Coromandel Indag factory in SIPCOT Cuddalore:

SACEM found 10 chemicals in a sample taken last month during a fire at the abandoned Coromandel Indag factory in SIPCOT.

On May 20<sup>th</sup>, 2006, there was a fire at the premises of the now-abandoned Coromandel Indag factory in SIPCOT, Cuddalore. The fire started at about 4 p.m. and continued till late in the evening. There was thick white smoke emanating from the unit that sent waves of panic in the surrounding communities. One woman, Lakshmi (35), wife of Mr. Rajiv residing near Hemalatha Hitech, was hospitalized as a result of the exposure to the toxic fumes. There was a very strong acidic odour and the smoke carried as far as the Cuddalore Old Town about 3 kms from the chemical complex. The wind was gentle and from the South East to North West. SACEM reports that people complained of dizziness, headache and eye irritation as a result of exposure to the smoke. Responding to the emergency, SACEM took an air sample downwind of the smoke from the unit at about 8:40 pm. The fire engine arrived at about 8 pm and finally and the fire was put out by 9 pm. The Fire Department personnel complained that they were ill-equipped to handle disasters and hazardous incidents in SIPCOT because they did not have an ambulance. Neither did the Fire Department have any knowledge about the chemicals on fire and they were unable to access anybody with that information. As a result, fire-extinguishing operations were delayed by nearly an hour.

**Sampling Date/Time:** 20 May 2006, 8:40 pm

**Sampling Location:** Near Indag gate on the ECR road about 20 metres from the fire.

**Sample taken by:** Community monitors of SACEM

### Results of the sample:

- Total of 10 chemicals detected – including Hydrogen Sulphide, Carbonyl Sulphide, Carbon Disulphide, Ethanol, Acetonitrile, Isopropyl Alcohol, 2-Butanone, Trichloroethene, Toluene and m,p-Xylenes.

### Levels of Chemicals detected:

S No.	Chemicals detected	Levels detected (ug/m3)	Number of times it exceeds the screening levels	Screening levels (ug/m3)
1.	Hydrogen Sulphide	10.0	10 (US EPA Region 6 Screening Level & Texas Short term screening levels)	1.00 (US EPA Region 6 Screening Level) 1.00 (Texas Short term screening levels) 330 (North Carolina 1 -hr Standards)
2.	Carbonyl Sulphide	14.0	17.5 (Texas Long Term screening levels)	0.8 (Texas Long Term screening levels) 8.0 (Texas Short Term screening levels)
3.	Carbon Disulphide	16.0	5.3 (Texas Long-Term Screening Levels)	730 (US EPA Region 6 Screening Level) 30 (Texas Short Term screening levels) 3 (Texas Long-Term Screening Levels) 186 (North Carolina 24 -hr Standards)
4.	Ethanol	46	--	18800 (Texas Short Term screening levels) 1880 (Texas Long-Term Screening Levels)
5.	Acetonitrile	19	--	62 (US EPA Region 6 Screening Level) 340 (Texas Short Term screening levels) 34 (Texas Long Term screening levels) 60 (California EPA Rfc)
6.	Isopropyl Alcohol	24	--	7850 (Texas Short Term screening levels) 785 (Texas Long-Term Screening Levels)

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S No.	Chemicals detected	Levels detected (ug/m3)	Number of times it exceeds the screening levels	Screening levels (ug/m3)
7.	2-Butanone (Methyl Ethyl Ketone)	6.4	--	1000 (US EPA Region 6 Screening Level) 3900 (Texas Long-Term Screening Levels) 390 (North Carolina Annual Standards) 3700 (North Carolina 1 -hr Standards) 1000 (California EPA Rfc)
8.	Trichloroethene*	5.0	4.54 (USEPA Region 6 Screening Levels)	1.10 (USEPA Region 6 Screening Levels) 1350 (Texas Short Term screening levels) 135 (Texas Long Term screening levels) 59 (North Carolina Annual Standards) 600 (California EPA Rfc)
9.	Toluene	11.0	--	400 (US EPA Region 6 Screening Level) 1880 (Texas Short Term screening levels) 188 (Texas Long-Term Screening Levels) 4700 (North Carolina 1 -hr Standards) 4700 (North Carolina 24 -hr Standards) 400 (California EPA Rfc)
10.	m,p- Xylenes	5.3	--	2070 (Texas Short Term screening levels) 208 (Texas Long-Term Screening Levels)

\* Known or suspected human or animal carcinogen

- Four out of ten chemicals detected exceed the USEPA Region 6 levels or any other levels of safe levels in the air. These chemicals are - Hydrogen Sulphide, Carbonyl Sulphide, Carbon Disulphide and Trichloroethene.
- 1 carcinogen detected – Trichloroethene was detected 4.54 times above the US Environmental Protection Agency Region 6 levels.
- Out of the 10 chemicals found – 8 chemicals target the eyes and the respiratory system, 7 chemicals target the skin and central nervous system, 6 chemicals target the liver, 5 chemicals target the kidneys, 2 chemicals target the Cardiovascular system, reproductive system and the blood and 1 chemical targets the heart, gastrointestinal tract and the Peripheral Nervous System.

#### Factsheet on the chemicals detected:

S No.	Name of the Chemical	Odour	Symptoms	Target Organs	Carcinogen
1.	Hydrogen Sulphide	Rotten eggs	Irritation of eyes, respiratory system; coma, convulsion,	Eyes, respiratory system, Central	No

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S No.	Name of the Chemical	Odour	Symptoms	Target Organs	Carcinogen
			conjunctivitis, eye pain, tears to eyes, dizziness, headache, weakness and exhaustion, insomnia, gastrointestinal disturbance	Nervous System	
2.	Carbonyl Sulphide	NA	NA	NA	NA
3.	Carbon Disulphide	A sweet ether-like odour	Dizziness, headache, poor sleep, weakness, exhaustion, anxiety, weight loss; gastritis; kidney, liver injury; eye, skin burns; dermatitis; reproductive effects	central nervous system, peripheral nervous system, cardiovascular system, eyes, kidneys, liver, skin, reproductive system	No
4.	Ethanol	Characteristic suffocating odour	Irritation eyes, skin, nose; headache, drowsiness, weakness, exhaustion, cough; liver damage; anaemia; reproductive effects	Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system	No
5.	Acetonitrile	An aromatic odour	Irritation nose, throat; nausea, vomiting; chest pain; weakness, exhaustion, convulsions; in animals: liver, kidney damage	Respiratory system, cardiovascular system, central nervous system, liver, kidneys	No
6.	Isopropyl Alcohol	Odour of rubbing alcohol	Irritation eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin	Eyes, skin, respiratory system	No
7.	2-Butanone (Methyl Ethyl Ketone)	A moderately sharp, fragrant, mint- or acetone-like odour	Irritation eyes, skin, nose; headache; dizziness; vomiting; dermatitis	Eyes, skin, respiratory system, central nervous system	No
8.	Trichloroethene*	Chloroform like odour	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 <b>Cancer Site:</b> [in animals: liver and kidney cancer]	Yes
9.	Toluene	Sweet pungent benzene like odour	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
10.	m,p- Xylenes	An aromatic odour.	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; nausea, vomiting, abdominal pain; dermatitis	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys	No

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