Disinformation

It was 15th December 1989, while reading the newspaper in the morning I was shocked to see a big advertisement issued by the Asbestos Cement Products Manufacturers' Association. The main line of the advertisement said, "After 60 years with a clean sheet, we won't let false propaganda dirty it". It goes on to say, "For over 60 years, Asbestos Cement Sheets have proven to be the ideal roofing material in India. With no scientific evidence of any health problems, whatsoever, associated with their use. Now vested interest are indulging in false propaganda . . . ."

And trying to create confusion by citing occupational hazards of the yeser years . . . . However, strict regulatory norms in line with ILO recommendations, observed during manufacturing eliminates this possibility . . . .

This is one of the best examples of not only disinformation, but also misleading the public by citing wrong information. This advertisement talks on two lines at a time: one is manufacturing of Asbestos Sheets and another is use of these sheets. While manufacturing has been established as a hazardous process even by ILO (see Encyclopedia of Occupational Health & Safety Page no. 185-197, volume no. 1) it is the use which is still in question. Several studies have shown that even the use of asbestos products is also not safe, specially the Asbestos roof sheets, because while cutting, or fixing the roof it produces dust and this short exposure can also be hazardous. The potential danger of getting cancer from asbestos was given in the British Journal of Industrial Medicine (Volume no. 131, page no. 91, 1974).

Mesothelioma (The cancer caused by Asbestos) Exposure time
22 Years Lived within 11 miles of Asbestos factory
2 Years Husband worked in Asbestos factory
4 Years Worked & lived near chicken farm made of Asbestos cement buildings
3 Years some exposure to brother's overall duty with Asbestos.

Apart from foreign studies done on the hazards of Asbestos there are several studies done by two of the leading institutes within the country.


This study revealed that out of 800 workers, 224 suffered from more advanced stage of asbestosis.

2. In a survey of an Asbestos Cement unit in Faridabad, Central Labour Institute (Bombay) found that out of 850 workers, 58 (about 7 percent) suffered from asbestosis.

Both the above institutes are well recognized Government supported autonomous organizations.

The above mentioned advertisement quotes studies done on the use of Asbestos and places it against the well recognized hazards related to manufacturing of Asbestos production, creating a false impression that not only the use but the manufacturing are nothing more than mere propaganda. This advertisement raises the question that is there any way out to stop such misleading campaigns or those in power can always misuse information to pursue their vested interest. This question needs our attention specially in view of when there is a move towards making the 'right to information' a constitutional right. Is this right any way going to stop those in power from misusing the information? Because more than the right to information it is important to prevent such misutilization of information.
Threshold Limit Values

"We could not bear the smell in the initial period. But now we are used to it", many workers in chemical plants have said. We lose our sensation of smell, we get used to lingering foul smells. In the beginning, the natural response of the body and mind is: 'Get out of this foul atmosphere'. And this response of the body for self-preservation gets blunted. Yet the action of the chemicals on human body does not stop; it continues.

Smell is deceitful. If the gas Hydrogen Sulfide is above a certain proportion in the air, then the nerve which is responsible for the sensation of smell gets affected and we do not smell the gas. But the gas continues to remain in the air, often in proportions dangerous to our health. Many toxic chemicals do not have a distinct smell.

If a child has fever, we use a thermometer to measure the temperature. By touch we may guess if the child has fever. But if a person having fever himself tries the same, he would not feel the fever of another person. And that is why we have meters – relatively ‘objective’ indicators – to measure the temperature. Similarly, if there are no meters, we cannot guess if a chemical is present in more than the harmful quantity. If there are two drops of Sulphuric Acid in a large room, it may not be dangerous. But what if half a litre fumes of the Acid are present in small room? What proportion of this Acid in air is harmful – in smaller or larger quantities, for shorter or longer periods. To facilitate the answering of these questions, TLVs (Threshold Limit Values) are given to certain chemicals.

Threshold Limit Values (TLVs)

TLVs refer to the concentration of chemicals in the air. Workers are exposed to chemicals every day, say 8 hours in a day and continuously day after day. It is believed that there is an average limit – which will not affect workers working daily – for every chemical. There are various types of TLVs. When only TLV is mentioned, it is an average limit. This is expressed in PPM or mgm per cubic meter of air. PPM refers to the parts (of chemical) per million parts of air. This is a limit given in terms of the volume of the chemical in the air. The milligram per cubic meter of air limit is straightforward.

There are 3 types of TLVs

1. TLV-TWA
2. TLV-STEL
3. TLV-C

TLV-TWA is time weighted average. It is applicable for 40 hours week (8 hours per day, 5 days in a week). The TLV limits as prescribed in the Western countries are 40 hours week. In India we have six days week or 48 hours week. While applying TLVs given by the western Institutes the TLV should be reduced proportionately in India. The method of reduction is clear and explained below.

For example: If the work every day is for 10 hours the limit gets reduced. Acetic Acid TWA = 10 P.P.M. (8 hour). For Acetic Acid, for 10 hours shift the TWA will become (10×8) = 80 P.P.M.

And if persons are working overtime and continuously exposed to double shift TWA will get reduced to the half for Acetic Acid and will become 5 P.P.M. The reason is, TWA controls the total amount of the chemical a person may inhale in a working week of 40 hours. If one is working for 10 hours then the average has to be reduced for the simple reason that the person inhales more air (so more chemicals contaminated in the air) in 10 hours than in 8 hours.

TWA gives only an average limit. For Acetic the TWA is 10 P.P.M. It means Acetic Acid can be more than 10 P.P.M in the air for some periods. (Say 20 P.P.M for 5 minutes). Such periods of going above limit are to be compensated by periods when Acetic Acid is present for less than the TWA say only 1 P.P.M for 1 hour. So that average for 8 hours should remain 10 P.P.M.

If there are no meters in your unit or plant, all this becomes less meaningful. The management has to install meters to measure the amount of chemicals in the air. Very few managements will do this on their own. If there is enough pressure by workers, only then will there be meters and we may know the amount of chemicals attacking our health.

If there are no meters you can lodge a complaint with the factory inspector. The Factory Inspector is legally bound to keep your name confidential. For the chemicals given in the Appendix installing the meters is a must.
STEL – Short Term Exposure Limit

This shows the limit for the amount of chemical one can safely breathe in a span of fifteen minutes. For Acetic Acid, STEL is 15 P.P.M. (15 parts by volume of Acetic Acid in 1 million (10 lakh) parts by volume of air). If any worker is exposed to air containing more than 15 P.P.M. of Acetic Acid and if the period of exposure is more than 15 minutes, this will be harmful for the worker. STEL is not an average as TWA. STEL gives the upper limit for exposure of 15 minutes duration.

Ceiling TLV – TLV-C

TLV-C gives the upper limit at every time. This limit should not be crossed any time. If it is crossed it is harmful. TLV-C is not prescribed for all chemicals. There are only around 500 chemicals for which TLV is prescribed. For thousands of chemicals TLV is not prescribed at all.

TLV is a Compromise

The fact of fixing a TLV itself is a compromise. The ingredients of TLV are:

a. normal conditions
b. an average healthy worker
c. affected by a single chemical
d. average limit which won’t harm.

These are the ingredients of TLV. None of these ingredients are satisfactory. In a process plant or engineering factory using chemicals, normal conditions do not exist. High temperatures, noise, humidity are present. TLV’s are not given for such conditions. Heat, high noise reduce the capability of the body to resist the attack of chemicals.

Effect of chemicals depends upon the dose per kilogram of body weight of the person. For example, 10 mg of a chemical will affect to lesser extent a worker weighing 70 kilograms than a worker weighing 55 kilograms. As we know average weight of Indian worker is less than the average weight of American worker. Hence, 10 P.P.M. of acetic acid will affect an Indian worker more than it will affect a worker in a developed western country. So the TLVs developed by western agencies for western workers should be proportionately reduced for Indian workers.

TLVs are for average healthy workers. Workers are already weakened by low wages (attacks on union), torturing travel to the work place, and added to all this they have endured attacks of pollutants for years. TLV refers to a healthy worker who is difficult to find. It means because workers are already weakened they will be able to endure far less amounts of chemicals than the prescribed TLVs.

In the workplace the air contains many chemicals, SO₂, NO₂, H₂SO₄. What happens when such a mixture of chemicals is inhaled? TLV does not consider such conditions at all. TLV refers to single chemicals only.

Finally, TLV figures are average. Actually experience tells us that we should not be exposed to any amount of toxic chemicals.

The TLV is developed from animal experiments and records of affected workers. Why TLVs at all? In prescribing TLVs, it is assumed that chemicals cannot be controlled to be zero P.P.M. in air. The processes have to continue though leakages may be there. For employers, shut downs to stop leakages to repair processes are more costly than the health of workers. So a compromise is created. In the world we have different TLVs for the same chemicals. For Carbon Monoxide, the –

British TLV is 180 mg/cubic meter of air,
Swedish TLV is 90 mg/cubic meter of air,
Russian TLV-C is 5 mg/cubic meter of air.

A change in TLV from five milligrams to one hundred and eighty milligrams per cubic meter of air, is amazing and cannot be explained by say colder atmosphere in one country or some such fact. TLVs may change with the countries and in the same country within years. Vinyl Chloride is a case to be noted.

In 1962 Vinyl Chloride Monomer, used for PVC production and TLV – 500 P.P.M.
In 1971 It was revealed that this chemical not only affects central nervous system but also bones, liver, kidney. TLV reduced to 200 P.P.M.
In 1973 British authorities issued interim TLV (Yes interim TLV) 25 P.P.M. Stricter standard was demanded by the unions.
In 1978 It was revealed Vinyl Chloride Monomer causes cancer of the liver. TLV became 5 P.P.M.
In 1982 TLV was 500 P.P.M. It got stricter to 5 P.P.M. in 1978 in England.

If the workers collect information, publicise it, create collective pressure the Government agencies are forced to pass stricter and better standards. In TLV sometimes it is written ‘Low TLV to protect eyes’ etc. But only in a few cases effect on reproductive system of women are referred to. Some chemicals have special effects on men and women. If working women create sufficient pressure there will be more
research about effects on that. TLV is not a mere unbiased scientific fact. But the standards depend on balance of forces. In U.S.A. where unions, workers were under attack recently, the management have started campaigning to loosen standards and increase TLVs for chemicals such as lead. Whether the management succeeds or not depends on the organized strength of workers.

Uses of TLV

In a fertilizer factory, the workers kept notes of the amount of Nox present in the atmosphere. Nox has a limit of 5 p.p.m. But the amount recorded were 40 p.p.m., and 20 P.P.M., showing that the amount of Nox in the air was 8 times more than the damaging limit. This record was used to expose the management in newspapers and to argue with the management, to build up awareness in other workers of the same factory. In that period TLVs had no legal status in India.

TLVs are useful to understand how far the management is being negligent. We should ask all the management to install necessary meters so that we can record the amounts of toxic chemicals present in air, then base our actions on this information. And find out if any chemical is affecting our health.

We can make use of TLVs given in books (listed below) and not prescribed by the amendments. The above example as noted, took place when TLVs had no legal standing. Similarly we can make use of TLVs in case of chemicals not listed in the amendments.

Some source to find TLVs

Some chemicals are described in the “Encyclopedia of Occupational Health”, published by I.L.O.

One can get information from the book “Dangerous Properties of Industrial Materials” by Sax.

Do see “the Factories Act (1948)” and the rules made by the state governments. These rules give details of precautions etc. in the case of various processes. Maharashtra Govt. in its rules has prescribed the limit values for noise. See the rules applicable in your state.

For noise, the Dutch Government has prescribed 80 dBA as the permissible exposure level. The British Government has prescribed 90 dBA as the permissible exposure level. The difference in 80 dBA and 90 dBA appears to be just of 10 dBA but the scale is logarithmic, that is in power of ten. In short 90 dBA is 10 times higher than 80 dBA (see OII Bulletin (FITA, no 15...). Even brief hearing capacity. S----- 2 given by Maharashtra Factories 1965. The Unions should see if permissible levels of exposure are prescribed in your state and see that the levels given by rules are not harmful, that is more than 80 dBA for 8 hours work.

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**LETTER TO THE EDITOR**

Query: We are working in a paint factory in Bombay. Four of us are paralyzed. Our wrists are badly affected. We work in a section where red oxide is used in large quantities. Please advise.

Ans: There are two aspects to take care of. No other worker should get affected. And the affected workers should be fully compensated. Make the workers aware of the effects of lead and its compounds. Precautions should be taken while working and afterwards. You can ask for more materials from us. Write to the Factory Inspector about the above and also your apprehension that the paralysis is related with red oxide. Yes, paralysis and muscles of the wrist getting affected are two possible effects of red lead or other lead compounds.

For claiming compensations, preserve the records of service and if possible records showing their particular section. Approach the ESIS doctor or public hospital to do tests for lead in urine and blood.

Lodge compensation claim with ESIS or with the Commissioner under Workmen's Compensation Act. Write to us if you want to know more details.
Wellston (US): A pizza plant leaked deadly ammonia gas on Saturday, injuring dozens of people and forcing authorities to order a complete evacuation of this town of 7500. Two dozen people overcome by the fumes were hospitalized and many other residents were given oxygen treatment by paramedics who rushed to the scene from all over the largely rural south-eastern quarter of the state.

Name of the Paper: Indian Express
Published at: Chandigarh
Dated: 29 Oct. 1989

Varanasi: Three members of a family died and one fell unconscious following the leak of poisonous gas from a molasses tank in the Babri area of the district on Friday.

Name of the Paper: Sunday Mid-Day
Published at: Bombay/New Delhi
Dated: 1 Oct. 1989

Nearly 100 people were reportedly affected when poisonous chlorine gas leaked from the Chlorinators India Limited’s caustic soda plant at Ganjam in Southern Orissa on Wednesday.

According to an official report here, 16 out of the 100 affected persons complaining of a burning sensation in their eyes and hearts, were removed to the local public health centre. Two of them were given oxygen and the rest were let off after first aid. No fatality was reported.

Name of the Paper: Free Press Journal
Published at: Bombay
Dated: 2 Oct. 1989

Rajkot: Three persons including one fireman were removed to hospital in an unconscious state after inhaling ammonia gas which leaked from an ice factory on the outskirts of the city on Saturday night, police said.

Name of the Paper: Sunday Mid-Day
Published at: Bombay/New Delhi
Dated: 1 Oct. 1989

Two persons were hospitalized when they inhaled oleum fumes which leaked out from a tanker after it turned turtle near Vijaypur on the Pathankot-Jammu highway this morning.

The gas was being carried to a detergent plant of Hindustan Lever at Bari Barahmana, near here.

But for the fact that the incident took place at an isolated spot, the leak could have led to a disaster because oleum, which is a super concentrated form of sulphuric acid, is a highly toxic gas.

However, an official press note quoted the Hindustan Lever authorities as saying that “oleum is not a lethal gas, but its inhalation for long duration can be harmful”.

Name of the Paper: Deccan Herald
Published at: Bangalore
Dated: 14 Oct. 1989
AFTER 60 YEARS WE WON'T LET FACTORY DIRT

For over 60 years, Asbestos Cement Sheets have proven to be the ideal building material in India. With no scientific evidence of any health problems whatsoever associated with their use.

Now vested interests are spreading a false propaganda and trying to create confusion by citing unscientifically verified hazards and problems of asbestos cement products to put Asbestos Cement Sheets in disrepute.

We think its time you knew the facts.

What are Asbestos Cement Sheets?

Asbestos Cement Sheets are made of 99% Cement and mixed with about 1% Chrysotile asbestos fibre. Asbestos being a quarry 107% all industrial uses

ASBESTOS CEMENT SHEETS.

1899: Fibrosis of the lungs of an asbestos worker described by a Scottish doctor from a post-mortem exam.

1930: Britain, asbestos named and recognised as a major industrial hazard.

1947: British Chief Inspector of Factories reports that lung cancer is associated with asbestos exposure.

1959: Mesothelioma, a rare type of cancer of the lung — is found among South African asbestos miners.

1968: Asbestos discovered in 1/4 of workers at an Indian Asbestos — Cement (A-C) factory.

1970: United States government sets asbestos standard at 5 fibres per cubic metre of air (5/m³).


1977: 11 factories in India produce total of 501,000 tonnes of Asbestos — Cement products.

It is estimated that 100,000 of the 1 million present and former asbestos workers in the U.S. will die of cancer. 

Times of India reports 35% of Bombay asbestos workers have asbestosis.

From 1976-1981, imports of asbestos fibres into India rose by almost 50%.

Sweden bans A-C cement altogether. Workers at Hindustan Ferodo, large factory producing asbestos brake and clutch linings, strike for 7 months for better working conditions.

India notified asbestosis as killer disease under the Factories Act.

1982: Britain bans many asbestos products. After public outcry following a television documentary on asbestos workers, British Government plans to reduce asbestos standard to 0.5 fibres/millilitre of air.

1984: As many as 11,000 workers are employed in India's 19 asbestos factories. Estimates of lung disease among them range up to 50%.

Asbestos mines continue to operate in Bihar, Andhra Pradesh and Rajasthan, producing 20,000 tonnes per year.
First "Workers’ Memorial Day" is Widely Observed

The U.S. labor movement designated April 29, 1989 as the first annual Workers’ Memorial Day, and events were held in more than 80 cities to mark the occasion.

Using the theme “Fight for the Living! Turn for the Dead,” the day commemorated the 39th anniversary of the Federal Occupational Safety and Health Act, passed in 1970. It also was meant to raise awareness of the mounting toll of injuries and deaths among workers. U.S. labor expects the number of work-related deaths to become a regular annual occurrence. The same date has been observed as the Canadian labor movement for many years.

In New York City, bus drivers stopped during their routes for a minute of silence. A labor rally was held in New York near the site of the 1911 Triangle Shirtwaist Fire, in which 146 garment workers were killed. In Los Angeles, labor met in Pershing Square to honor a building engineer who died in a high-rise building fire and a social worker who was murdered on the job at a mental health clinic.

Labor marchers at a rally in Sacramento carried a banner with the names of more than 400 Californians killed on the job in a single year. There was also memorial service at a meeting of the Southwest Labor Studies Association, held that day in San Francisco.

One of the largest rallies was in Harrisburg, Pennsylvania, where union members placed wreaths of 268 carnations, one for each worker who died on the job in Pennsylvania last year, into the Susquehanna River.

"Workplace accidents continue to kill more than 10,000 Americans a year," said AFL-CIO President Lane Kirkland speaking in Kansas City. Margaret Seminaro, the AFL-CIO’s health and safety director, said an American worker is injured on the job every six seconds.

Seminario also noted that "the First Workers’ Memorial Day, coming at the beginning of the Bush Administration, points up the opportunity for OSHA to renew its commitment to workers’ safety.

U.S. Clerical Work Sent Overseas

Working at home is not the only option which modern technology has made possible in the world of clerical work. Because of computers and satellites, clerical jobs now can be transferred overseas, just like factory jobs have been for years.

Dozens of U.S. companies are now sending their labor-intensive paperwork "offshore offices" in the West Indies, Southeast Asia, Ireland, India and China. The data is keyed into computer operators paid a fraction of U.S. wages. Then it may be shipped back in a file of magnetic tapes or disks, or mailed back by satellites.

One Southern California subcontractor Saztec Corporation, sends other companies’ clerical work to its facilities in the Philippines and Singapore. It pays $3 an hour in those countries, but some other firms pay less.

Saztec says that overseas productivity is high and that turnover is less than one percent a year compared to 20 to 50 percent in the States. One Saztec manager says that overseas clerical workers are usually faster and more accurate than Americans.

An estimated 40 companies in the U.S., Japan and England now send their office work overseas. Banking insurance, legal and publishing firms, which produce massive amounts of paperwork, profit the most from the practice.

Some now use satellite telecommunications to speed up the process of sending information back and forth.

Several years ago, American Airlines phased out 200 key punching jobs at its accounting center in Tulsa, Oklahoma, and created a subsidiary, Caribbean Data Services, in Barbados. Now the airlines sends a million passenger tickets per week to Barbados, and workers there sort them and enter relevant information on video display terminals.

The final data is sent by satellite back to Tulsa. The workers in Barbados are paid a third of their US counterparts’ wages.

America saves about $4 million a year with the new arrangement. Now Caribbean Data Services is also accepting work on contract from other U.S. companies. "With technology where it is now," said one official of the airlines, "we had no reason to keep this operation in America.

The Barbados government offered tax and other incentives in exchange for the decision to locate the facility there, believing it would create jobs and increase the population’s familiarity with computers.
Occupational Health News

The Supreme Court has admitted a public interest litigation alleging that some employees of the Bhopal Union Carbide plant had been used as guinea pigs for chemical testing by the company, without their consent and knowledge. While admitting the writ petition, a division bench comprising of Justice M.N. Venkatachallia and Justice S R Pandian issued notices to the Union and Madhya Pradesh governments, the US based Union Carbide Corporation, the Union Carbide of India Limited and others.

The petition filed by Union Carbide Karamchari Sangh urged the court to direct the Central Bureau of Investigation (CBI) to produce all medical reports and correspondence on the research results seized from the Bhopal plant.

Name of the paper: Indian Express
Published at: New Delhi
Dated: 2nd Nov. 1989

The MCD ruled out a special squad to deal with industrial gas leakages at its Standing Committee meeting on Wednesday.

A variety of gases including chlorine, ammonia, hydrogen were used in industry and it was not possible to train personnel to deal with leakages of all of them, the Commissioner said.

The Delhi Fire Service would continue to meet any situation arising out of gas leakage, the members observed.

The Committee approved the expenditure of Rs 4.5 lakh on entertaining various delegations in the single month from June 23 to July 20 this year.

This included a lunch for delegates participating in a conference on "Nonalignment in International Relations" at the Parliament House Annex, which had nothing to do with the corporation.

Name of paper: Daily
Published at: Bombay
Dated: 5 Nov. 1989

The six-day all-India conference on "Occupational Hazards" was inaugurated by C.D. Oommachen, the Maharashtra pollution control board president and MLA, here yesterday.

Speaking on the occasion Oommachen said industrialization may harm society and the people if occupational health hazards were not controlled.

About 200 delegates from various industries, research institutions and government organizations are participating in the conference – P'TT.

Name of paper: Newstimes
Published at: Hyderabad
Dated: 16 Oct. 1989

Each year a major national campaign is spearheaded by the Council on 4th March, its foundation day, which is widely celebrated as the National Safety Day by Industries, Trade Unions, Institutions and Government Departments. The purpose of this campaign is to renew the commitment of employees and general public to safety. NSC has produced some promotional literature and other material for the event. For further details contact:

K.C. Gupta Director General, National Safety Council, Post Box No 26754, C.I.I. Bldg. Sion Bombay 400 022 (Phone: 473696/473285
GRAM: NASACIL)

National workshop on 'Occupational Health Problems of Workers from weaker section of the Society in India' is going to be organised by Institute of Research in O.R.L. during 16th to 18th December, 1989, at Panu. For further details contact:

Dr. S.S. Bhutada, Chairman, 'Ayodhya' Charitable Trust's Institute of Research in O.R.L. 577, Shukerwar, Subhash Nagar, Pune - 411 002. (Phone: 448575 / 442109)

The National Safety Council announced a specialized public training programme on 'Safety in Storage, Handling and Transportation of Hazardous Chemicals' from 21st to 23rd November, 1989 at West End Hotel, 45, Marine Lines, Bombay 400 020, keeping in mind the amendments to the Factories Act in 1987, which have placed increased responsibilities on industry and this requires a thorough knowledge of the Hazardous Chemicals, their Storage, Handling and Transportation.

If you are interested in acquiring material please contact National Safety Council, Bombay.
The Worker's Voice

This is an official publication of National Federation of Sugar Workers, Food and General Trades - Philippines. In the Oct. 15 - Nov. 15, 1987 issue there is an interesting article on Indian Sugar Industry.

Address: Bacolod City, Negros Occidental, Philippines.

House Cleaners Bulletin

This is a Bulletin mainly focusing on issues and struggles of House Cleaners and Domestic workers of Oakland. It is published in Spanish and English.

Publisher: House Cleaners Co-op.
P.O. Box 28071 Oakland Ca. 94604 USA

Dumping of Toxic Wastes in Bangladesh

As part of the work on the issue of environment as well as dumping, UBINIG (the publisher) came in contact with concerned journalists and activists. The present publication is a result of such interaction. The booklet is prepared by Mr Mostafa Kamal Mujumdar a renowned journalist who has monitored the news of the proposal for the hazardous waste base power plant has collected valuable information.

UBINIG
5/3 Barabo Mahanpur,
Ring Road, Shyamoli, Dhaka-7

JUST PUBLISHED

Diseases at Work-II

Reference sheets on diseases for which compensation may be claimed.

This is a booklet which provides information related to the compensation for several diseases, under the Workman's Compensation Act and the employees State Insurance Act. The process and steps for claiming compensation for occupational diseases is also elaborated. A very useful publication for Unions/Activists and advocates.

Publisher: Society for Participatory Research in Asia.
Author: Vijay P. Kanhere
Contribution: Rs 40 for individuals. Rs 50 for organizations.
## Appendix

THE SECOND SCHEDULE

(See Section 41-F)

### Permissible Levels of Certain Chemical Substances in Work Environment

<table>
<thead>
<tr>
<th>Substance</th>
<th>Time Average (9 hrs)</th>
<th>Weighted Concentration (15 min)</th>
<th>Permissible Limits of Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
<td>ppm</td>
</tr>
<tr>
<td>Acetylene</td>
<td>100</td>
<td>190</td>
<td>150</td>
</tr>
<tr>
<td>Acetic Acid</td>
<td>10</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>Asbestos</td>
<td>750</td>
<td>1790</td>
<td>1000</td>
</tr>
<tr>
<td>Acrolein</td>
<td>0.1</td>
<td>0.25</td>
<td>0.3</td>
</tr>
<tr>
<td>Acrolein-skin</td>
<td>.2</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Acriderm</td>
<td>-</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Anhydride</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Ammonia</td>
<td>0.25</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>Antifreeze</td>
<td>2</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Antifreeze (e. g. Pentone)-skin</td>
<td>0.1</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Arsenic &amp; compounds (as As)</td>
<td>-</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>10</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Benzen</td>
<td>-</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>Benzen Toluol</td>
<td>0.1</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Bromine</td>
<td>0.1</td>
<td>0.7</td>
<td>0.3</td>
</tr>
<tr>
<td>Butane</td>
<td>800</td>
<td>1800</td>
<td>300</td>
</tr>
<tr>
<td>2-Butanol (Methylhydrazine MEK)</td>
<td>200</td>
<td>500</td>
<td>300</td>
</tr>
<tr>
<td>n-Butyl alcohol</td>
<td>150</td>
<td>710</td>
<td>200</td>
</tr>
<tr>
<td>n-Butyl alcohol-skin</td>
<td>250</td>
<td>C150</td>
<td></td>
</tr>
<tr>
<td>sec-Butyl, sec-Butyl acetate</td>
<td>200</td>
<td>125</td>
<td>250</td>
</tr>
<tr>
<td>n-Butyl, n-Butyl acetate</td>
<td>0.5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>n-Butyl Mercaptan</td>
<td>0.05</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Cadmium dust and salts (as Cd)</td>
<td>-</td>
<td>2.2</td>
<td></td>
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<td>Calcium oxide</td>
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<td>Chloroform</td>
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<td>Chloroform</td>
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<td>Chloroform (as Chloroform)</td>
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<td>Chromic acid and chromates (as Cr)</td>
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<td>Chromates Salts (as Cr)</td>
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<td>Cotton dust, raw</td>
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<tr>
<td>Cresol, all isomers-skin</td>
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<tr>
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Collected dust limit
Not more than 6 times a day with at least 60 min. interval between successive exposures.
BUT WHERE ARE METERS TO MEASURE THE LIMIT?!?!

THIS SMOKE IS INJURIOUS‼️

NO, IT IS WITHIN T.L.V. LIMITS!