
 GOVERNMENT OF DUBAI	Organization Unit Public Health & Safety Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY	
	Form sheet title:	Guidelines for Safe use of Industrial Organic Solvents		اسم النموذج:
	Doc Ref.	DM-PH&SD-P4-TG16		رقم النموذج:

Safe use of Industrial Organic Solvents

Background: The use of organic solvents is extremely widespread in industrial operations and formulations such as paints and lacquers, adhesives, degreasing, dry cleaning, printing etc. Solvents exposures may occur in processing, manufacture, formulation or use of products and substances. While the degree of hazard may vary, all solvents should be considered potentially hazardous and due care taken in their use. Dubai Occupational Health and Safety Regulations require the employers to ensure a safe work area by taking adequate safety precautions in industrial activities.



Guidelines:

A. Identification

1. All organic solvents or chemicals shall be labeled according to their class of risk by affixing an approved class label and an approved subsidiary risk label for any secondary risks.
2. a. Before handling organic solvents, reference should be made to the current Material Safety Data Sheet (MSDS), which should be obtained from the manufacturer or supplier.
- b. If the company is importing organic solvents or chemicals or other dangerous goods, a Material Safety Data Sheets shall be obtained from the supplier.
- c. A person or company using or storing organic solvents or dangerous goods shall ensure that an appropriate Material Safety Data Sheet is available for each material for reference and inspection by Inspectors/Officers from Dubai Municipality.

B. Prevention and Control Measures:

1. Work area sampling and analysis should be undertaken at regular intervals by competent persons to ensure that exposure standards are not exceeded.

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2. In addition to monitoring of the work area and personal monitoring at each work location, biological monitoring of the worker should be done for workers with a substantial risk of exposure.
3. Employees engaged in the manufacture, formulation, handling or use of organic solvents shall be medically examined at least once in every 12 calendar months in accordance with tests prescribed by the Medical Officer with particular reference to the nature of the individual exposure.
4. ***Exposure Standards***
 - i. Worker exposure to organic solvents should be kept as low as practicable. Every attempt should be made to keep exposure well below the exposure standards in “Threshold Limit Values for Chemical Substances in the Work area” adopted by ACGIH, followed in the Public Health and Safety Department Standards for the Emirate of Dubai.
 - ii. When the body is exposed to two or more solvents, the effect of different hazards may be either additive or a combination that exceed the sum of individual effects. Assessment of exposure must consider total solvent exposure.
5. ***Control Measures***
 - i. Whenever practicable, a substance that gives rise to harmful atmospheric contaminants should be eliminated or replaced by one that is harmless or less harmful than the offending substances.
 - ii. A less hazardous method of performing a task or modifying a process should be substituted for the original method. Where possible, aqueous (water-based) solvents should be substituted for organic solvents.
 - iii. Where practicable, the use of mechanical handling methods should be used to avoid exposure of workers.
 - iv. Hazardous atmospheric contaminants should be effectively controlled at their source by means of a local exhaust system.
 - v. The design of effective ventilation system should also consider combustible, flammable or potentially explosive nature of materials handled.



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- vi. Air from local exhaust ventilation system should not be re-circulated into the workroom.
- vii. Air conditioning inlets or compressors supplying air should be distant from the exhaust ventilation systems.
- viii. General ventilation and dilution ventilation are not as effective as local exhaust ventilation for the control of atmospheric contaminants. They may be useful to control minor contaminant emissions of low toxicity.
- ix. Hazardous operations should be isolated so as to reduce to a minimum the number of employees potentially liable to be exposed to the contaminant.
- x. Where practicable, the substances to be utilized or produced should be totally enclosed with proper exhaust arrangements to prevent personal contact with the substances and also prevent any release of contaminants into the air of the workshop. E.g. provision of exhaust and lid arrangements on degreasing plant operations.

6. *Personal Actions*

The following personal actions should be adopted:

- i. Avoid contact with skin and inhalation of vapour.
- ii. Do not enter confined spaces where vapour may have collected and follow confined space entry procedures.
- iii. Do not lean over vessels containing liquid.
- iv. Do not assume an empty vessel is safe.
- v. Do not eat, drink or smoke in the workplace.
- vi. Wash hands prior to eating or drinking.
- vii. Any spills should be cleaned up promptly. Follow Material Safety Data Sheets spillage mitigation procedures.

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4. Containers for storage and transport should bear hazard warning labels to include hazardous nature of the substance and procedures to be adopted in case of emergency.
5. The design of warning labels should consider languages and the illiterate pictorial warning in addition to written information should be provided.

F. Education and Training

1. All employees working with organic solvents must be informed of the hazards from exposure to the contaminants and the precautions necessary to prevent damage to their health.
2. Employees should be trained in appropriate procedures to ensure that they carry out their work safe guarding against the exposure to themselves and fellow workers.

G. Transport of organic solvents should be as per the specifications adopted by International Standards for packages, containers and vehicles and appropriate hazard warning labels for the solvent.

H. Spills and Leaks

In case of spills or leaks:

1. Where safe to do so, close off the source of the spill or leak, taking appropriate precautions to avoid exposure.
2. Confine the spill or leak; cordon off the area or isolate the ventilation.
3. Avoid inhalation of vapour and contact with skin and eyes.
4. Wear appropriate personal protective equipment.
5. Do not allow smoking, naked lights or ignition sources.
6. Transfer the material from damaged to other containers or remove as appropriate.
7. Absorb or contain spill or leak residues with sand, earth or some other appropriate absorbent.

