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தொழிற்சாலைகள் ஆய்வகத் துறை

அனுப்புநர்
திரு. எஸ்.பொன்சிங் மோகன்ராம், பி.இ.,
தகவல் தொடர்பு அதிகாரி/
தொழிற்சாலைகள் துணைத் தலைமை ஆய்வர்
(சோதனை மற்றும் பாதுகாப்பு) (பொ),
தொழிற்சாலைகள் தலைமை ஆய்வர்
அலுவலகம், சென்னை-5.

பெறுநர்
ஸ்ரீ.ஸ்வேதா நாராயண்,
H 31/39, அஷ்டலக்ஷ்மி கார்டன்ஸ்,
பெசன்ட் நகர்,
சென்னை -- 90

கடித எண் ஊ1 / 25138 / 2011 . நாள். 24 08.2011

பொருள்: தகவல் அறியும் உரிமைச் சட்டம், 2005 – சட்டத்தின் கீழ்
விவரங்கள் கோருவது – குறித்து.

பார்வை: 1. மண்டல தொழிலாளர் நிலைய இயக்குநரின் மனு
நாள் 25.07.2011.
2. ஸ்ரீ. ஸ்வேதா நாராயண் என்பவரின் மனு நாள்
23.07.2011.

பார்வை2ல் காணும் தங்களின் விண்ணப்பத்தில் கோரப்பட்ட தகவல்கள் கீழ்வருமாறு
அளிக்கப்படுகிறது.

Recommendations suggested by the Committee constituted by the
Government of Tamil Nadu in regard to Bromine leakage on 7.3.2011 at Shasun
Pharmaceuticals Limited, Cuddalore.

1. The Chemicals should be stored after studying the
compatibility of materials with each other.
2. The rolling shutter doors storage rooms should be provided with
peepholes or glass covered openings to monitor happenings inside the
store room by the Security Guard on round.
3. Specific emergency procedure with respect to Bromine gas release
should be included in the Onsite Emergency Plan after proper risk
assessment.
4. Now available system for contending the bromine released from the
storage room in manuals, but it should be made automatic to prevent
any leakage of gases to the atmosphere.

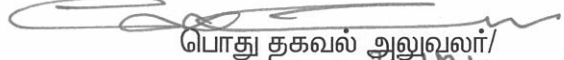
5. The affected store room had the rear wall which also formed part of the compound wall for Unit – II in the south side. As this wall had opening for ventilation and there was no vacant land of Shasun behind the affected store, the gas got released into the atmosphere. It is to be noted that all Hazardous Process Units should have 30% of entire Plant area be developed into green belt. In this Plant, there was no vacant space around Unit – II. Moreover, Unit – I and II which were independent factories have been located adjacent to each other. Shasun should explore creation of Green belt around the entire complex. Location of chemical store rooms adjoining the compound wall should be discontinued and the location should be decided on the Quantitative Risk Analysis Study.
6. Bromine is not found in the list of hazardous chemical storage inside the factory and hence it should be included in the list.
7. The fire extinguishers and sprinklers system were not provided in the chemical storage room and hence they should be provided.
8. SOPs and SMPs have to be framed for handling and storage of Bromine.
9. Hazard audit checklists of the factory should have specific provisions for handling bromine liquid handling safely.
10. Emergency response procedures have to be developed with specific reference to bromine liquid.
11. The raw material storage stock as on 7.3.2011 does not contain any details about the bromine storage.
12. The response procedures for the bromine leak and fire have not been framed and provided in the prepared onsite emergency response plan.
13. The plan has been prepared based on HAZOP and Risk Assessment report in the month of June, 2007 but has not been mention about the storage of bromine in the factory. The HAZOP and Risk Assessment study has not been done for bromine storage handling and processing.
14. No labeling was found in many of the chemical packages. Proper labeling should be done for all the chemicals as per NFPA and other relevant standards.
15. Antidote solutions in bottles were kept inside the godown itself. These bottles should have been kept outside for emergency purpose.

16. The air-conditioning system provided for the godown was not working during inspection. It was observed that low boiling chemicals were stored in the godown. Since AC system is not working, the chemicals may get released into atmosphere at any time. Low boiling and highly volatile chemicals should strictly be stored under controlled atmosphere.
17. The load cell for weighing chemicals found located inside this godown was having electrical connections. This load cell should be disconnected and located outside the godown. Neither provision of electrical connections nor dispensation of chemicals inside the godown should be permitted.
18. Ordinary electrical fittings were found along with flame proof electrical equipments. Hazardous Area Classification should be carried out for the Sodium room and all improper electrical fittings inside the hazardous area should be removed.
19. Ordinary wax coated spanners were being used for removing the lid of the Sodium barrels. Only non-sparking tools should be used in such hazardous areas. Standard Operating Procedures were not displayed in the godown.
20. The prepared On-site Emergency Plan does not confirm to the legal requirements and the required details shall be furnished in the On-site Emergency Plan as per Rule 13(1) of Control of Major Accident Hazard Rules, 1994 as well as Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.
21. Structured training programmes on Safety, Emergency Planning shall be imparted to all the workers including all the contract workers.
22. A Hazard Identification and Risk Analysis Study shall be conducted for the entire Plant as per IS – 15656 – 2006.
23. The Plant Inspection Mechanism should be improved to make effective inspections thus enhancing the safety management system in the industry. The compliance to the legal requirements shall be effectively monitored.
24. The Safety and Health Policy shall be declared as per the Rule 62 B of Tamil Nadu Factories Rules.
25. Standard Operating Procedures shall be prepared for the accident investigation procedures for effective investigation process. The recommendations of the accident investigation reports shall be implemented and a compliance report in this regard shall be prepared and kept available.

26. Safety Manual in bilingual i.e. in English and Tamil depicting hazards and the safety precautions, shall be prepared.
27. A separate work permit shall be used for working with energized systems.
28. Mock drills shall be conducted for Bromine emergency.
29. Mock drills shall also be conducted for release of Ammonia and Mercaptan.
30. Process Safety Management System needs to be introduced in the factory to take care of the process safety aspects. All the 14 elements of PSM needs to be implemented considering the importance of the Process Safety in the industry.
31. Checklist shall be prepared for the Bromine liquid handling.
32. Photo Ionizing Detector shall be procured and kept available in the factory for detecting bromine gas present in the atmospheric air.
33. Pipeline Colour Coding shall be provided in conformance with the Indian Standards and Boards informing the colour coding shall be displayed at various places inside the factory.
34. The scrubber provided to the Chemical Store Room shall be made functional and operational.
35. Do's and Don't's shall be displayed in the unloading points of Isobutyl, Acetophenone, Caustic Soda, Isopropyl Chloride and Methylene Chloride. The emergency procedures during unloading of these chemicals shall also be displayed.
36. Drain channels shall be covered with metal mesh plate/concrete slabs.
37. Level indicators shall be provided to the Sulphuric Acid Storage tank.
38. Level gauges of the Storage Tanks are heavily corroded which needs to be repaired.
39. Isopropyl Chloro Acetate Tank (No. 8) concrete base shall be constructed without any opening.
40. Unloading procedures for Nitrogen shall be displayed in English and Tamil.
41. The working platform shall be made safe by providing fencing on all sides.
42. Name plate shall be provided to the Nitrogen Tank.

43. Material Safety Data Sheet for Nitrogen shall be displayed.
44. The illumination level in the Air Drier Room is below the Standards and hence the illumination level shall be provided as per the Standards.
45. An Illumination Study shall be conducted for the entire Plant and the existing illumination level shall be validated to the standards.
46. The Diesel unloading hose shall be kept under lock and key.
47. The height of the Diesel underground Tank shall be increased to meet the standard requirements.
48. Safety Precaution and emergency procedures connected with unloading of diesel shall be displayed bilingual.
49. The Furnace Oil Tanks shall be provided with name plates containing type and quantity of the material stored along with safety precautions. Unloading area shall be marked on the floor.
50. The corroded Aldehyde product tank shall be repaired.
51. The make shift and non-designated tanks utilized for storing Acetone, Aldehyde and Methanol shall be removed and all these chemicals shall be stored only in the designated tanks.
52. The highly corroded supporting columns of the Crude and FF tanks shall be repaired.
53. The cooling water approach platform and ladder are of wooden construction which needs to be changed to the metal construction type.
54. The Nitrogen Reservoir approach ladder shall be provided with hand rails on both sides.
55. The outlet valves of the Ammonia Cylinders shall be capped.
56. Name plate conforming to the requirements shall be provided to the IPA Tank.
57. Sprinkler system conforming to NFPA Standard shall be provided to the Hydrogen Storage. Static electricity precautions and measures shall be displayed and ensured in the Hydrogen Processing Area.
58. Sensors shall be provided at all the Hydrogen processing area with the setting of 25% of LEL and the same shall be connected to the control room with alarm signals.

59. Material Safety Data Sheet for Hydrogen in bilingual shall be displayed.
60. Two tons of Sodium is stored in the factory. MSDS of Sodium shall be displayed at the entrance of the Sodium Storage Room.
61. The Sodium being highly reactive with water, the consequence of water entering into Sodium room during heavy flooding and tsunami should be considered and accordingly Sodium Storage shall be revalidated.



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சென்னை-5.


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