

DOC IPPC 2.7

RISK ASSESSMENT

The International Chemical Safety Card (ICSC 0089 appendix a) identifies the types of hazards / exposure associated with Acetylene chiefly fire and explosion. Acetylene is highly flammable and therefore naked flames, sparks and smoking should be avoided in the immediate vicinity during the use and preparation of this gas. Risk of explosion when handling Acetylene / air gas mixtures is another hazard that requires careful monitoring. In order to minimize these risks, the Acetylene plant at Poligas Ltd has been designated as a strictly NON SMOKING area, and all personnel entering this restricted area are well versed in abiding to this fundamental rule. Furthermore the plant and site is so constructed to offer adequate natural ventilation with a building height in excess of 5 meters together with large louver apertures facing all wind directions. All plant equipment is installed using explosion proof electrical gear and no lighting fixtures have been installed to further eliminate risk. All product supply lines have in line surge arrestors all equipment is well grounded to prevent build up of electrostatic charge. In line with the European Agency for Safety and Health at Work guidelines (appendix b page 8 compiled) a work place Hazard checklist has been compiled and action taken in this regard. Particularly, slippery floors have been avoided, by employing crude concrete flooring. Access to the acetylene hoppers (about 2 meters above floor level) have been carefully designed to include hand rails and non slip climbing stairs. High pressure release safety valves have been included in strategic places and equipment. All personnel are provided with breathing masks and safety gear to eliminate risk of inhalation of fine dust particles particularly during the emptying of Calcium Carbide from sealed metal drums. A mechanical hoist is also installed to avoid lifting of heavy raw material in excess of 25 kgs.

Environmental risk data is rather scanty in the case of Acetylene. The environmental hazard value score (IRCH) for Acetylene is however classified as the least hazardous with a < 25% ranking (appendix C). The products of degradation of acetylene are Carbon Dioxide and Carbon Monoxide and the product itself and its products of degradation are not toxic. There are no known significant effects or critical hazards from an environmental perspective.

Bearing in mind the above considerations an emergency Response Plan (appendix D) has been prepared based on the guidelines set out in the document fire and safety risk assessment factories and warehouses (HM Government) as well as the AIGA code of practice (022/05)