LEAD ASSESSMENT

SOP #19000-019

Issue Date: February 2016 *Next Revision Date: February 2017* *Area: SCEP*

Document Owner: Environment, Health and Safety Manager

Document Contact: Safety/Hygiene Advisor

SCOPE AND PURPOSE:

To assess the exposure or likelihood of exposure of a worker to lead at the St. Clair Ethanol Plant.

HEALTH HAZARDS:

Lead may have toxic effects on the nervous, digestive and immune systems, and on lungs, kidneys, skin and eyes. The primary route of exposure is inhalation or absorption.

A time-weighted average exposure value of 0.05ppm has been prescribed for lead in Ontario.

IDENTIFICATION OF MATERIALS:

Sources of lead at the St. Clair Ethanol Plant include:

1. Hydrometers in the Laboratory

PROCESS DESCRIPTION:

1. Hydrometers

   Multiple hydrometers are used in the laboratory fume hoods, when analyzing 200 proof ethanol. The volume of the lead inside of the hydrometers is approximately 3 mL. All lead in the hydrometers are solid lead shots. One to four hydrometers are in use at one time.

POTENTIAL FOR EXPOSURE:

1. Hydrometers

   Under normal conditions, workers do not come into contact with the lead that is contained within hydrometers. Laboratory Technicians and Operations personnel may be exposed to lead upon breakage of a lead-containing hydrometer. The potential routes of exposure may include ingestion and/or skin absorption.

EXPOSURE CONTROL:

1. Hydrometers

   Work & Hygiene Practises -
   - No food or drink is allowed in the lab
   - Lead-containing hydrometers are stored and handled carefully by Laboratory Technicians and Operations personnel.

   Personal Protective Equipment -
   - Laboratory Technicians and Operations personnel wear FR coveralls/pants and shirt, gloves and safety glasses while performing analysis related tasks including handling of hydrometers.

TRAINING:

All workers, contractors, subcontractors etc. are informed, during site orientation/onboarding of the designated substances on site. Sources of exposure, measures and procedures to control are also reviewed.

STORAGE & TRANSPORTATION:

1. Hydrometers

   Hydrometers are stored in a test tube holder located inside the fume hood when not in use. Extra hydrometers are kept in their original packaging for storage and transportation to the Laboratory, and remain in their protective boxes until they need to be put into service. All hydrometers onsite are kept track in the laboratory's inventory, as per the laboratory scope procedure - SOP-18000-007.

EMERGENCIES:

If a hydrometer is broken the area should be contained utilizing controls outlined in the exposure control section, properly contained in clearly marked plastic bag in the fume hood, and disposed of as per the outbound materials procedure via the site environmental advisor.

CONCLUSION:

1. Hydrometers

   Based on the expected frequency and the small amount of solid lead involved in an exposure, a worker's health would not likely be affected by a breakage of a hydrometer even upon failure of the controls that are in place.

Since worker health is not likely to be affected, a control program is not required.

REFERENCES TO RELATED DOCUMENTS:

Ontario Regulation 490/09, "Designated Substances"

SCEP Outbound Material Procedure

SCEP Laboratory Scope Procedure SOP-18000-007

END OF PROCEDURE

REVISONS			
No.	**Date (mm/dd/yyyy)**	**Author**	**Description**
0	03/28/2016	J. Eldridge	Created