

February 10, 2015

Distribution List

**ACTIVITY SUMMARY – HAZARD  
INVESTIGATION DATED JANUARY 28, 2015**

References: A. e-mail from Janice Jaskolka to Troy Templeman dated Wed, Jan 28, 2015 8:08 PM  
B. Section 11.8.1 of OI Consultant Handbook, dated Jan 2, 2015  
C. e-mail from Adam Pearson to Kirsti MacAulay dated Thu, Jan 29, 7:52 AM  
D. e-mail from Edwin Austria to Kirsti MacAulay dated Thu, Jan 29, 9:24 AM  
E. 34094 VHF 1.0 VOC Zenthane, Material Safety Data Sheet (MSDS). Issuing date 22 Dec 2011, revision date 4 Dec 2012  
F. Control Measures Guide – Labour Program, Human Resources and Social Development Canada dated Jul 16, 2013. Retrieved Feb 2, 2015 from [http://www.labour.gc.ca/eng/health\\_safety/pubs\\_hs/cmg.shtml](http://www.labour.gc.ca/eng/health_safety/pubs_hs/cmg.shtml)  
G. InfoTech Bulletin #6 – Product Safety Aspects of Madison Polyurethane Coatings, Madison Chemical Industries Inc. dated Jan 2007.  
H. Toluene Diisocyanate (TDI) and Related Compounds Action Plan [RIN 2070-ZA14], U.S. Environmental Protection Agency dated Apr 2011.  
I. Isocyanate Factsheet from the Hazard Evaluation System & Information Service, California Department of Public Health, dated May 2014.

1. A potential hazard was identified and reported at Reference A. Options Inc. (OI) immediately completed a risk assessment in accordance with Reference B and concluded the risk to be **MEDIUM**. A hazard investigation and analysis was initiated.
2. The investigation identified potential for equipment/facility damage and/or injury resulting from the completion of ergonomic assessments and the use of associated instruments and tools in client Paint Shops and areas isocyanate is present. More specifically:
  - a. potential spark hazard from the use of mobile device, metal tape measure, digital camera, and/or digital force gauge in Paint Booths and/or Class A/Division A “Mix” Booths; &
  - b. potential hazards associated with isocyanate exposure and subsequent client PPE requirements.
3. As outlined at Reference C, the client confirms mobile devices (cell phones), metal tape measure, digital cameras, and/or digital force gauges are not allowed into Gas Fill, Paint and/or “Mix” Booths and these restrictions are posted upon entry to these areas. If a force measurement is required in any of these areas, only an analog force gauge is authorized for use.
4. A consolidated list of areas where isocyanate is present in both this specific client’s Cambridge and Woodstock locations was provided at Reference D and enclosed for careful review and reference.
5. Reference E confirms the Flammable and Combustible isocyanate classification. To avoid potential ignition of vapors/spray by static electricity discharge, all metal equipment must be grounded. Only “non-sparking” tools and/or equipment may be used.

6. Reference G notes free isocyanate evaporates from material when atomized in spray applications. Similarly, unreacted isocyanate refers to uncured materials containing the chemical as indicated at Reference H.
7. The potential health effects associated with exposure to free/unreacted isocyanates outlined at Reference F includes skin and eye irritation and skin and respiratory sensitization (develop an allergy). Direct skin contact may cause rashes, blistering, hardening and reddening of the skin. If the liquid splashes into the eyes, damage to the cornea can occur. Fully cured paints contain no free isocyanates and therefore, do not present any danger. Some of the most common symptoms experienced by workers exposed to isocyanates are:
  - a. excessive tear secretion;
  - b. dry throat;
  - c. dry cough;
  - d. chest pains; &
  - e. difficulty breathing.
8. Reference G notes that isocyanates are not likely to cause problems with human fertility, pregnancy, or fetal development.
9. To mitigate the identified hazards, the following OI administrative controls are established:
  - a. the client specific hazards and areas isocyanate is present will be clearly identified and communicated to the OI team via e-mail, team meeting, OI policy development, and new employee orientation to facilitate individual awareness and decision-making;
  - b. Consultants will not hesitate to request and review associated MSDS from the client to clearly understand the potential hazard;
  - c. client safety signage takes precedence over anonymous worker/team member/team leader personal and/or contradictory safety opinions;
  - d. Consultants will avoid potential free/unreacted isocyanate exposure through alternative assessment methods including:
    - i. can a historical video/photos be used or reference;
    - ii. can the worker be video taped completing the task from a safe vantage point;
    - iii. can the worker provide tools used to be weighted/measured? Are the materials available in a store/stock room;
    - iv. can a subjective interview with a worker be conducted to facilitate a high level understanding of the required tasks. The interview can identify measurements or additional details that perhaps the worker can provide by weighing/measuring parts;
    - v. can the postures used be simulated by the worker (perhaps during the interview); &
    - vi. following these data collection methods, the report can include a disclaimer.
  - e. in rare situations when a Consultant believes potential hazard exposure is unavoidable, the appropriate Manager will be consulted as far in advance as practical to discuss the circumstances and identify alternative assessment methods. Consultants will not unilaterally decide to potentially expose themselves to free/unreacted isocyanate;
  - f. in rare situations when not practicable or feasible to use alternative assessment methods, the client must provide the appropriate respiratory personal protective equipment (PPE) and training; &
  - g. pregnant consultants will avoid potential exposure to free/unreacted isocyanate as a precautionary measure.

10. An interim review and confirmation of the relevant administrative controls will be conducted on-site at the OI client with supporting consultants within the next 10 days.
11. A comprehensive DRAFT isocyanate policy will be presented for review at the summer OI PD training.



Troy Templeman  
Manager  
Options Incorporated

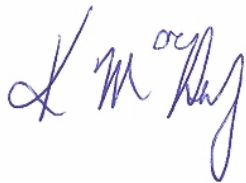
Distribution List

President  
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H&S Representative  
H&S file

February 12, 2015

INVESTIGATION RESULTS REVIEW

1. The investigation results were presented for review this day with the originating Consultant, Health & Safety Representative, and OI President in accordance with Reference B. Recommended corrective actions will be implemented and the investigation made available to all Consultants for review.
2. An evaluation of the effectiveness of the corrective actions will be conducted in July 2015.



Kirsti MacAulay  
President  
Options Incorporated

Additional areas that will be included on the list are:

- North Paint- Primer booth and Cavity Wax (VIN Plate)
- South Paint- Primer, Clearcoat, Repair Deck, Paint Hospital
- West Paint –Primer Auto Zone

	<b>Toyota Safety Management System (TSMS)</b>			
	Document name:	<b>Isocyanate Control Program Appendix A: Shop Management and TMs Included</b>		
TSMS ref: 4.4.6	Revision date:	25-Nov-13	Freq. of review:	24 months
Document ID: 446_17 Isocyanate Control Program Appendix A				Version 2.0

Location	Area	Team Members Included	Type of Program
Cambridge	Plastics - Monofoam	TL and TM	Full
	Paint/Plastics - Lexus Bumper Clear Coat	Mix Room TL, TM and TPM TMs	Full
	Admin - Plastics	Mfg. Eng. Specialist	Partial
	South Assembly - Final 1 and Trim 1	TL and TM	Partial
	North Assembly - Final 1 and Final 2	TL and TM	Partial
	South Paint Blackout Booth (VIN Plate)	TL and TM	Partial
	Maintenance - Plastics	TL/TM who work on isocyanate-containing equipment in the above areas	Full
	Maintenance - all other areas	TL/TM who work on isocyanate-containing equipment in the above areas	Partial
Woodstock	Plastics - Bumper Clear Coat	Mix Room TL and TM	Full
	Admin - Plastics	Mfg. Eng. Specialist	Partial
	Assembly - Final 1	TL and TM	Partial
	Paint Shop Final 1 (VIN Plate)	TL and TM	Partial
	Maintenance - Plastics	TL/TM who may work on isocyanate-containing equipment in the above areas	Full
	Maintenance	TL/TM who may work on isocyanate-containing equipment in the above areas	Partial