



ON Semiconductor®

**SOHELP PROGRAM IMPLEMENTATION IN ON SEMICONDUCTOR
MALAYSIA SDN. BHD. (ISMF) - SEREMBAN**

by Devachitra Theavaretnam

Mac 15th, 2017

PRESENTATION OUTLINE

- ❖ **INTRODUCTION**
- ❖ **SOHELP IMPLEMENTATION**
- ❖ **PROMOTIONAL ACTIVITIES**
- ❖ **OVERALL OVERVIEW OF SOHELP**
- ❖ **RECOMMENDATIONS FOR FUTURE SOHELP ENHANCEMENTS**



INTRODUCTION – COMPANY BACKGROUND

- ON Semiconductor is a leading supplier of semiconductor based solutions. operates throughout North America, Europe and Asia Pacific regions
- ON Semiconductor Malaysia Sdn. Bhd. was incorporated in 1979. It has two sites in Seremban, Malaysia that houses wafer manufacturing (ISMF) and assembly/test operations for a wide variety of semiconductor products.
- ISMF was established in 1987 approximately 1100 employees, which is a high volume wafer fab with 50,000 square feet of clean room space, located on a 6 acre campus, which has semiconductor manufacturing of 6", 8" and 12" wafer.
- Our main products are:
 - automotive
 - computing
 - industrial
 - military
 - communications
 - consumer
 - medical
 - aerospace applications





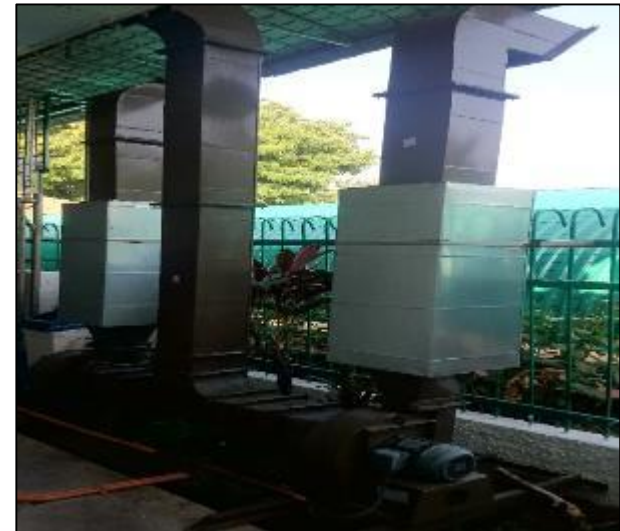
Install sound proof equipment & building windows for the N2 plant area which is adjacent to the building(<80dB)



New compressor heatless dryer – no intermittent purging (reduce <70dB)



New gen set during purchase built in silencer (reduce <85dB)



Install silencer for the exhaust system (<60dB)



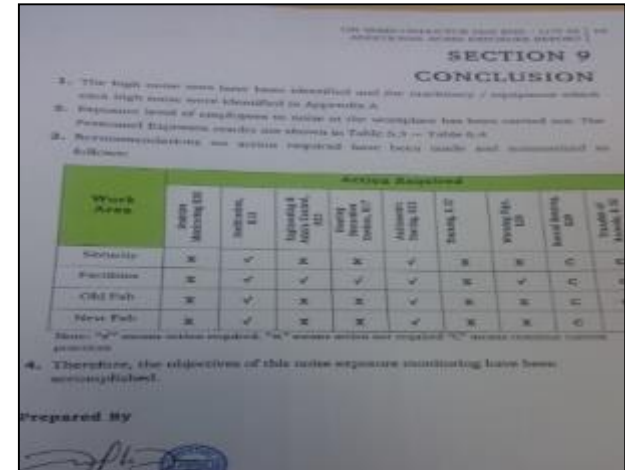
Injection piling for building construction (<80dB) – minimal sound



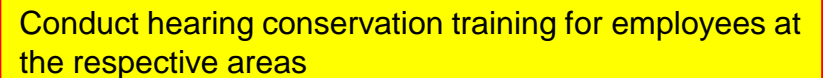
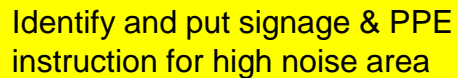
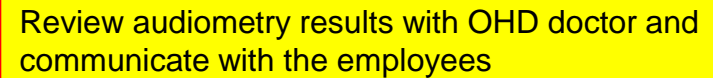
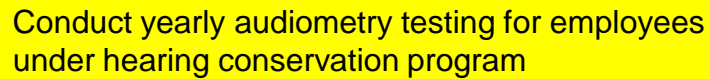
Re-map the walking area & working area at hearing conservation area (yellow line) (<80dB)



Conduct noise exposure assessment for work areas



Complete and continuously monitor the actions from the assessment report



BEFORE



Lots or wafers were transported manually by climbing up the staircase

AFTER



Lots and wafers were transferred using Dumbwaiter or good hoist

BEFORE



Manual handling of chemicals drums, transported by trolley

AFTER



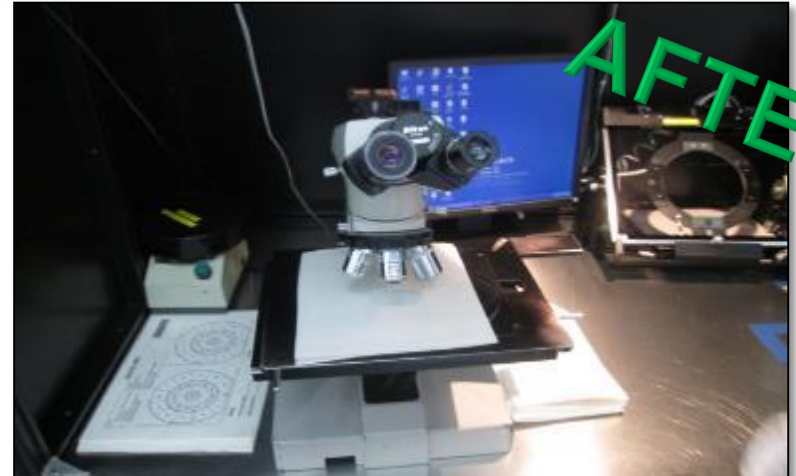
Chemical drums are transported using lifting mechanism - hand pallet jacks - reduce back pain and physical force

BEFORE



Improper inspection scope area with average lighting which cause blurry vision for employees

AFTER



Proper inspection work station with bright lights to reduce fatigues and prevent visionary issues

BEFORE



Employees pursuing wafer inspection work in standing position causing back pain and fatigues

AFTER



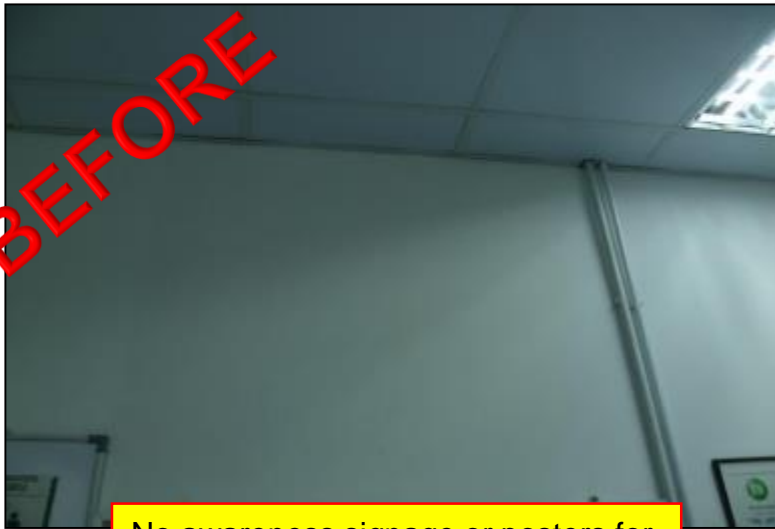
Wafer Inspection area were provided with cushioned adjustable chairs with back rest to avoid back pain and fatigues



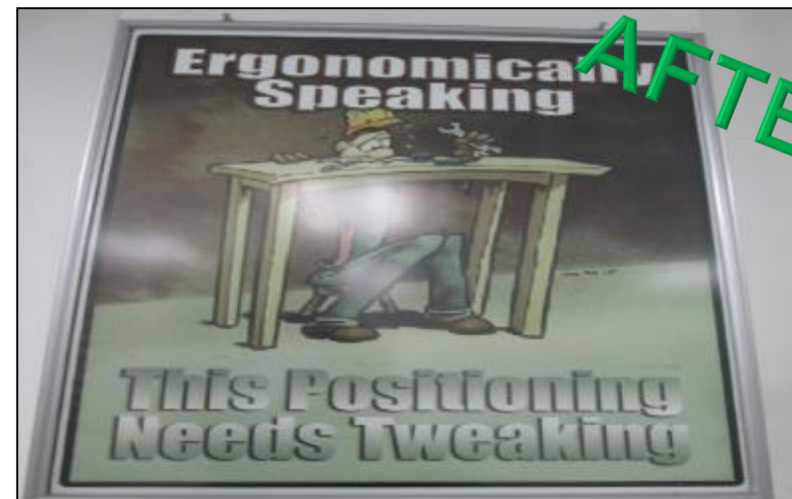
Improper staging of by products and no implementation of 5S



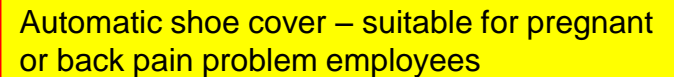
OSH promotion towards 5S implementation - kanban marking for storage location



No awareness signage or posters for Ergonomics specifically



OSH awareness on Ergonomics - signage and posters are made available for employees



Conduct body symptom survey for ergonomics concern employees

Conduct ergonomics assessment for work stations

SOHELP – CHEMICAL MANEGMENT IMPROVEMENTS LEVEL 4



Proper storage cabinet and room for chemicals and automated dispensing system



Signage provision according to CLASS Reg. 2013

BEFORE

PRODUCT SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: POCL3

Chemical formula: POCL3

Synonyms: Phosphoryl Chloride/Triphosphorochloride Oxide; Phosphorus Chloride Chloride/Trichloride Oxide; Phosphoryl Trichloride

Product Use Description: Semiconductor Processing

Manufacturer/Importer/Supplier: Air Products and Chemicals, Inc. (APC) Malaysia Sdn Bhd, Alor Setar, PA 10105-1501, USA. Tel: 1-800-353-1234 (toll-free) or 1-800-752-1557 (toll-free) or 1-800-752-1557 (toll-free)

Emergency telephone number (24/7): 1-800-752-1557 (toll-free)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration (wt %)
Phosphoryl chloride	10025-97-8	100%

3. HAZARDOUS IDENTIFICATION

MSDS based on CPL Reg 1997

AFTER

POCL3

Phosphorus Oxychloride EXTREMA® 2.25kg B1.5Q HXIIIPE N

Peringatan: Sangat berbahaya. Menyebabkan luka bakar. Menyebabkan iritasi pada saluran pernapasan. Menyebabkan iritasi pada mata. Menyebabkan iritasi pada kulit. Menyebabkan iritasi pada sistem peredaran darah. Menyebabkan iritasi pada sistem reproduksi. Menyebabkan iritasi pada sistem kekebalan tubuh. Menyebabkan iritasi pada sistem pencernaan. Menyebabkan iritasi pada sistem ekskresi. Menyebabkan iritasi pada sistem endokrin. Menyebabkan iritasi pada sistem saraf pusat. Menyebabkan iritasi pada sistem saraf tepi. Menyebabkan iritasi pada sistem otot. Menyebabkan iritasi pada sistem tulang. Menyebabkan iritasi pada sistem kulit. Menyebabkan iritasi pada sistem rambut. Menyebabkan iritasi pada sistem kelenjar. Menyebabkan iritasi pada sistem reproduksi. Menyebabkan iritasi pada sistem kekebalan tubuh. Menyebabkan iritasi pada sistem pencernaan. Menyebabkan iritasi pada sistem ekskresi. Menyebabkan iritasi pada sistem endokrin. Menyebabkan iritasi pada sistem saraf pusat. Menyebabkan iritasi pada sistem saraf tepi. Menyebabkan iritasi pada sistem otot. Menyebabkan iritasi pada sistem tulang. Menyebabkan iritasi pada sistem kulit. Menyebabkan iritasi pada sistem rambut. Menyebabkan iritasi pada sistem kelenjar. Menyebabkan iritasi pada sistem reproduksi.

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SDS provision according to CLASS Reg. 2013

ON SEMICONDUCTOR SCG Industries (M) Sdn Bhd

9.0 CONCLUSIONS

The Chemical Health Risk Assessment was conducted at ON SEMICONDUCTOR SCG Industries Sdn Bhd, Lot 55, Senawang Industrial Estate, 70450 Seremban, Negeri Sembilan.

It was conducted from 12th November 2014 with final assessment on 5th January 2015 and last document confirmation on 5th January 2015 is in compliance to the requirement spelled out under the Occupational Safety and Health (Use and Standard of Exposure of Chemicals Hazardous to Health) Regulations 2000.

The assessment enabled the organization to make appropriate decisions on action to be taken to minimize further the workers exposure to chemicals hazardous to health used in the work place. Various recommendations which are deemed appropriate by the assessor have been laid down in the report. It is hoped that the recommendations will help to create a better working environment, further improve the quality of work, health and safety standards in ON SEMICONDUCTOR SCG Industries Sdn Bhd. In conclusion, this assessment has successfully met its objectives.

Conduct CHRA every 5 years

ON SEMICONDUCTOR (MALAYSIA) SDN BHD
SEREMBAN

2014 CHRA Corrective Action

No.	Item/Issue/Defect/Problem	Corrective Action	Responsible Person	Completion Date	Remarks
1	Chemical Labeling and Storage	1. To ensure all chemical containers are properly labeled with appropriate information. 2. To ensure all chemical containers are properly stored in accordance with the relevant regulations.	Mr. [Name]	18 January 2015	Chemical labeling and storage procedures are being reviewed.
2	Chemical Labeling and Storage	1. To ensure all chemical containers are properly labeled with appropriate information. 2. To ensure all chemical containers are properly stored in accordance with the relevant regulations.	Mr. [Name]	18 January 2015	Chemical labeling and storage procedures are being reviewed.
3	Chemical Labeling and Storage	1. To ensure all chemical containers are properly labeled with appropriate information. 2. To ensure all chemical containers are properly stored in accordance with the relevant regulations.	Mr. [Name]	18 January 2015	Chemical labeling and storage procedures are being reviewed.

Reviewed by: [Signature]
Date: 18 January 2015
Name: [Name]
Position: [Position]

Complete all the CHRA action items

UTM - A&A LABORATORY
Malaysia's Quality Laboratory
Approved for Environmental Monitoring

CHEMICAL EXPOSURE MONITORING
REPORT
(AREA & PERSONAL MONITORING 2015)

AT
ON Semiconductor Malaysia Sdn. Bhd.
Lot 55, Senawang Industrial Estate,
70450 Seremban, Negeri Sembilan.

Done by:	UTM - A&A Laboratory Benjamin Mahamad Shamsuddin Korog Kedahon Kemangan 1, Zon 17, Jalan Pintas, 11010, Unswen, Teluk Anson, 11010, Teluk Anson, Selangor Darul Ehsan
Prepared by:	Hygiene Technician: Mohd. Sahrudin
Monitoring date:	22nd and 30th December 2015
Report Reference:	APP. NO: JKSP/EE/127/171-5/1(198)

Yearly chemical exposure monitoring – area & personal

SOHELP – CHEMICAL MANAGEMENT IMPROVEMENTS LEVEL 4

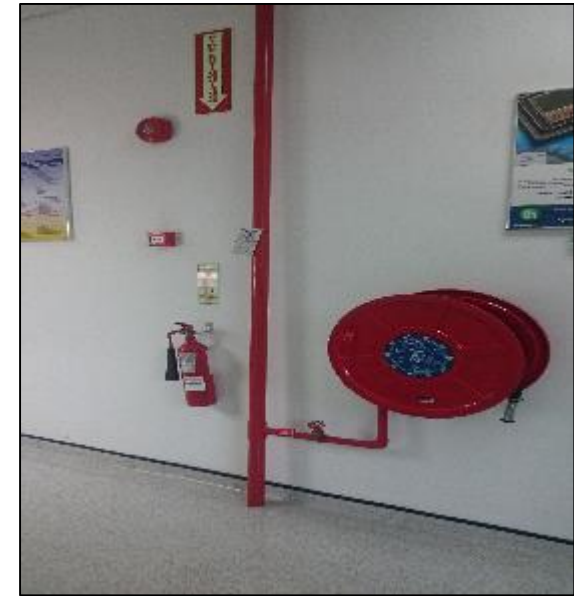
Availability of ERP Equipment & System



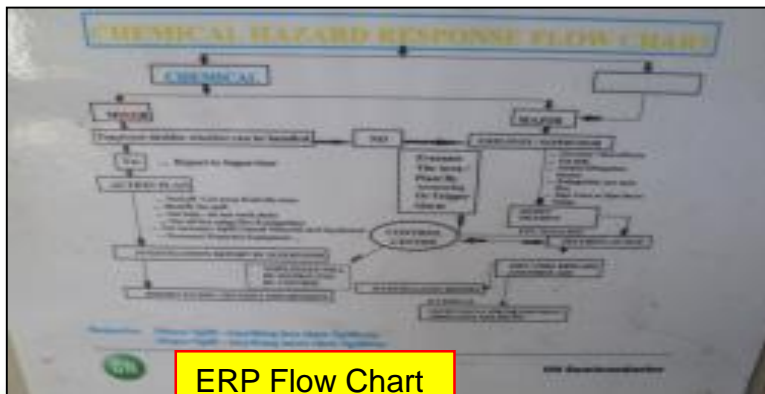
Emergency Evacuation Route



Emergency eyewash / shower



Fire fighting tools



ERP Flow Chart



Spill Cart Station for Spillage

PROMOTIONAL ACTIVITIES

- Incorporate SOHELP concepts into our EHS Week 2016
 - Health Talks related to Ergonomics (Physiotherapy, Back Pain Management)
- Monthly EHS promotional activities
 - Noise related quizzes / information sharing
 - Chemical related communications



PROMOTIONAL ACTIVITIES

- Quarterly EHS video shooting
 - PPE during chemical handling awareness
 - Forklift safety awareness
- Monthly & Quarterly EHS award / recognitions
 - Unsafe act reporting related to EHS, not limiting to SOHELP contents
 - Unsafe condition reporting related to EHS, not limiting to SOHELP contents



EHS Spot On AWARDS – Q4 2016

Q3 : (1) Selvamani – Probe
(2) Chanthran – Facilities

Name	Area	Month	Description of feedback
Syed Aliif	Photo	Oct	Strong chemical smell at Developer area due to exhaust design for the tool
Tharsha Raj	etch	Oct	GS gas cylinder trolley faulty (broken welding points)
Selvamani	Probe	Oct	Ergonomic improvement for BIC tool at Probe with trolley usage
Mazis Ng	Warehouse	Nov	Carousel sensor was not sufficient (hands movement still allowable below the sensor)
Inthiran	COE	Nov	Fix cover for the blades at Taper tools for safe work condition
Chanthran	Facilities	Nov	Platform of the sky lift used for height job was rusted and damaged – unsafe
Kuhan	QA	Dec	Obstructed visual aid at the door during carrying hot drinks at the main off winding machine area
Mazis Ng	Warehouse	Dec	Walk path lining & convey mirror installation near site 3 building to avoid employees bumping into moving vehicles
Mohd Ikiwan	Photo	Dec	EBR chemical can splash through cover without glass

OVERALL OVERVIEW OF SOHELP

- Good program to start off among the various industries in Malaysia
- Good consultation and able to bond a good working relationship among companies and DOSH officers
- DOSH to understand the difficulties faced by companies related to SOHELP issues and move towards enhancement

RECOMMENDATIONS FOR FUTURE SOHELP ENHANCEMENTS

- Better recognition & awards for the company and individuals related to SOHELP program implementation
- Detailed guideline by DOSH for implementations
- Fun motivating program rather than strict enforcement program
- Categorize the companies into industrial groups for better comparison and bench marking





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THE END
– THANK YOU –

