

**COURSE OVERVIEW HE1820**

**Professional Process Safety Inspector (PPSI)**  
**Module 1: Fundamentals of Process Safety**

**Course Title**

Professional Process Safety Inspector (PPSI):  
 Module 1: Fundamentals of Process Safety

**Course Date/Venue**

February 04-08, 2024/The Mouna Meeting  
 Room, The H Dubai Hotel, Sheikh Zayed Rd -  
 Trade Centre, Dubai, UAE

**Course Reference**

HE1820

**Course Duration/Credits**

Five days/3.0 CEUs/30 PDHs



**Course Description**



***This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.***

This certification program is designed to train delegates on Process Safety Inspection and certify them as Professional Process Safety Inspectors. The program comprises of 4 modules that shall be taken in order:-



- Module 1: Fundamentals of Process Safety
- Module 2: Process Safety Management (PSM) & Regulatory Framework
- Module 3: Human Factors & Cultural Aspects
- Module 4: Process Safety Auditing & Site Inspection



Module 1 of this program is designed to provide participants with a detailed and up-to-date overview of Fundamentals of Process Safety. It covers the process safety and the major industrial accidents and their impacts; the importance of process safety in the industrial setting; the basic terminologies and definitions; and the process safety management (PSM), hazard identification, HAZOP and What-if analysis.

During this interactive course, participants will learn the risk assessment and risk matrix and its application; the principles of layers of protection analysis (LOPA), independent protection layers (IPL), safety instrumented systems (SIS) and safety integrity level (SIL) and its determination; the functional safety lifecycle; the importance of facility siting, blast radius and impact zones; the passive and active protections in design, land use planning around industrial sites and fire zone planning; the fundamentals of mechanical integrity; the asset integrity and reliability and non-destructive testing techniques; and the corrosion monitoring and protection, inspection frequency and scheduling.

### Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Complete Module 1 of the “Professional Process Safety Inspector” program is your successful road for this prestigious professional certification
- Define process safety and discuss the major industrial accidents and their impacts
- Explain the importance of process safety in the industrial setting and the basic terminologies and definitions
- Carryout process safety management (PSM), hazard identification, HAZOP and What-if analysis
- Employ risk assessment and risk matrix and its application
- Recognize the principles of layers of protection analysis (LOPA), independent protection layers (IPL), safety instrumented systems (SIS) and safety integrity level (SIL) and its determination
- Discuss functional safety lifecycle, the importance of facility siting, blast radius and impact zones
- Apply passive and active protections in design, land use planning around industrial sites and fire zone planning
- Discuss the fundamentals of mechanical integrity and apply asset integrity and reliability and non-destructive testing techniques
- Employ corrosion monitoring and protection, inspection frequency and scheduling

### Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials, sample video clips of the instructor’s actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

### Who Should Attend

This course provides an overview of all significant aspects and considerations of fundamentals of process safety for site inspectors, safety engineers, supervisors, newly appointed managers, junior managers, safety representatives and newly qualified health and safety advisors within the process industries.

**Course Certificate(s)**

- (1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

**Recertification is FOC for a Lifetime.**

**Sample of Certificates**

The following are samples of the certificates that will be awarded to course participants:-



- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

\* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*



**Haward Technology Middle East**

Continuing Professional Development (HTME-CPD)

CEUs

### CEU Official Transcript of Records

**TOR Issuance Date:** 14-Nov-22

**HTME No.** 74851

**Participant Name:** Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE1820	Professional Process Safety Inspector: Module 1: Fundamentals of Process Safety	October 02-06, 2022	30	3.0

**Total No. of CEU's Earned as of TOR Issuance Date** **3.0**

**TRUE COPY**



Jaryl Castillo  
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology is accredited by









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\* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*

### Certificate Accreditations


Certificates are accredited by the following international accreditation organizations:-

- 
The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

### Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

### Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



**Mr. John Burnip, CSA, SMT, PSS, EHS, SAC, STS, IOSH, OSHA, NEBOSH-ENV, NEBOSH-IGC, NEBOSH-IFC, NEBOSH-PSM, NEBOSH-IOG, TechIOSH,** is a **NEBOSH Approved Instructor** and a **Senior HSE Consultant** with over **45 years** of practical **Offshore & Onshore** experience within **Oil, Gas, Refinery, Petrochemical** and **Nuclear** industries. His wide experience covers **NEBOSH International General Certificate** in Occupational Health & Safety, **NEBOSH National Certificate** in Construction Health & Safety, **NEBOSH Environmental Management**, Hazardous Materials & Chemicals Handling, **PHA, HAZOP, HAZCOM, HAZMAT, HAZID, Hazard & Risk Assessment, Emergency Response Procedures** Behavioural Based Safety (**BBS**), **Confined Space Entry, Fall Protection, Emergency Response, H<sub>2</sub>S, Safety Management System (ISO 45001), Accident/Incident Investigation System and Report PSM, Risk Assessment, SCE FMEA Failure Investigations, Site Management Safety Training (SMSTS), Occupational Health & Safety and Industrial Hygiene, Crisis Management & Damage Control** in Oil & Gas Industry, **Enhancing HSSE Safety Performance & Effectiveness, Overhead & Gantry Crane Safety, HSSE Principles & Practices Advanced, Lifting & Rigging Equipment Lifting Tackles Inspection License/Relicense, API 780 Security Risk Assessment Methodology** for Petroleum & Petrochemical, **Advanced Process Safety Management** with PHA, **Quantitative and Qualitative Risk Assessment, IADC/API Mobile Drilling Rig Inspections, Maintenance and Audits, H<sub>2</sub>s Training and Rescue with Respiratory Equipment, Job Safety Analysis (JSA), Work Permit & First Aid, Project HSE Management System, Health & Hygiene Inspection, PTW Control, Process Modules Fire & Gas Commissioning, MSDS, Ergonomics, Lockout/Tagout, Fire Safety & Protection, Spill Prevention & Control, Tower & Scaffold Inspection, Scaffolding Operations, Scaffolding Equipment, Bracket Scaffolds, Scaffolding Labelling, Pre-fab Scaffolding; Erecting, Maintaining & Dismantling Scaffolding** in accordance with the **British Standards Code of Practice 5973; Heavy Lifting** operations, Cantilevered Hoists, **Offshore** Operations, **Offshore** Construction, Basic **Offshore Safety** Induction & Emergency Training (**BOSIET**), **Onshore** Fabrication & **Offshore** Pipelaying & Hook-Up, **Crane Inspection, Crane Operations, Oilfield Startup & Operation, Steel Fabrication, OSHA, ISO 9001, ISO 14001, OHSAS 18001 and IMO (SOLAS) Regulations.** Mr. Burnip has greatly contributed in upholding the highest possible levels of safety for numerous International Oil & Gas projects, Generation Systems & Platform Revamp, LPG & Gas Compression, Marine, Offshore and Power Plant Construction. Currently, he is the **HSE Advisor** of Solvay wherein he is responsible in planning and implementation of the corporate safety program (OSHA codes).

During Mr. Burnip's long career life, he had successfully carried out numerous projects in **Europe, North America, South America, Southeast Asia, Middle East** and the **North Sea**. He had worked for Delta Offshore Group, Solvay Asia Pacific, Likpin Dubai, SADRA/DOT, **ZADCO, McDermott International (USA, Qatar, Egypt, India, Oman, Dubai and Abu Dhabi), PDO, Shell, ARAMCO,** Salman Field, Leman Offshore Gas Field, GEC, Harland & Wolff PLC Belfast in North Ireland, Howard Doris – Kishorn in Scotland, **Westinghouse Electric** in Brazil and South Korea and **Chevron Oil** in Scotland as the **Commissioning Project Engineer, Project & Safety Engineer, Estimating Engineer, Senior Instrument Engineer, Instrument Field Engineer, Lead Instrument Engineer, Instrument Engineer, Engineer, Emergency Response Training Manager, HSE Advisor, HSE Instructor, HSE Supervisor, Instrumentation Supervisor, Instrumentation Specialist, Project Coordinator, Instrumentation Technician** and **Tank Farm Instrumentation Technician**.

Mr. Burnip has a **Bachelor's** degree in **Business Studies** from the **Somerset University (UK)**. He is a **Certified/Registered Tutor** in **NEBOSH Certificate in Environmental Management, NEBOSH International General Certificate, NEBOSH International Certificate in Fire Safety & Risk Management, NEBOSH Process Safety Management Certificate** and **NEBOSH International Oil & Gas Certificate**; a **Certified Safety Auditor (SAC)**; a **Certified ISO 45001 Auditor**; an **Environmental Health and Safety Management Specialist** on Fall Protection, Elevated Structures, Material Handling, Trenching & Excavations; a **Welding Brazing Safety Technician**; a **Certified Safety Administrator (CSA) - General Industry**; a **Safety Manager/Trainer – General Industry**; a **Petroleum Safety Manager (PSM) - Drilling & Servicing**; a **Petroleum Safety Specialist (PSS) - Drilling & Servicing**; a **Safety Planning Specialist**; a **Safety Training Specialist**; a **Certified Instructor/Trainer**; a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and further holds a Certificate in **Mechanical Engineering Craft Practice** from the **City & Guilds of London Institute**; a **NEBOSH Level 3 Construction Certificate (UK)**; and holds a **Cambridge Teaching Certificate**. He is a well-regarded member of the **National Association of Safety Professionals, the Association of Cost Engineers (UK), Institution of Occupational Safety & Health (TechIOSH)** and an **Associate Member of World Safety Organization**. Further, he has conducted innumerable trainings, workshops and conferences worldwide.

**Course Fee**

**US\$ 5,500** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

**Training Methodology**

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

**Course Program**

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

**Day 1: Sunday, 04<sup>th</sup> of February 2024**

0730 – 0800	<i>Registration &amp; Coffee</i>
0800 – 0815	<i>Welcome &amp; Introduction</i>
0815 – 0830	<b>PRE-TEST</b>
0815 – 0930	<b><i>What is Process Safety?</i></b>
0930 – 0945	<i>Break</i>
0945 – 1030	<b><i>Historical Perspective: Major Industrial Accidents &amp; Their Impacts</i></b>
1030 – 1130	<b><i>Importance of Process Safety in the Industrial Setting</i></b>
1130 – 1230	<b><i>Basic Terminologies &amp; Definitions</i></b>
1230 – 1245	<i>Break</i>
1245 – 1315	<b><i>Overview of Process Safety Management (PSM)</i></b>
1315 – 1420	<b><i>Case Study: Bhopal Gas Tragedy</i></b>
1420 – 1430	<b>Recap</b>
1430	<i>Lunch &amp; End of Day One</i>

**Day 2: Monday, 05<sup>th</sup> of February 2024**

0730 – 0930	<b><i>Basics of Hazard Identification</i></b>
0930 – 0945	<i>Break</i>
0945 – 1030	<b><i>Tools for Hazard Identification: HAZOP, What-If Analysis</i></b>
1030 – 1130	<b><i>Introduction to Risk Assessment</i></b>
1130 – 1230	<b><i>Qualitative versus Quantitative Risk Assessment</i></b>
1230 – 1245	<i>Break</i>
1245 – 1315	<b><i>Risk Matrix &amp; Its Application</i></b>
1315 – 1420	<b><i>Case Study: Piper Alpha Disaster</i></b>
1420 – 1430	<b>Recap</b>
1430	<i>Lunch &amp; End of Day Two</i>



**Day 3: Tuesday, 06<sup>th</sup> of February 2024**

0730 – 0930	<i>Principles of Layers of Protection Analysis (LOPA)</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Independent Protection Layers (IPL)</i>
1030 – 1130	<i>Introduction to Safety Instrumented Systems (SIS)</i>
1130 – 1230	<i>Safety Integrity Level (SIL) &amp; Its Determination</i>
1230 – 1245	<i>Break</i>
1245 – 1315	<i>Functional Safety Lifecycle</i>
1315 – 1420	<i>Workshop: LOPA Exercise on a Given Process</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch &amp; End of Day Three</i>

**Day 4: Wednesday, 07<sup>th</sup> of February 2024**

0730 – 0930	<i>Importance of Facility Siting</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Understanding Blast Radius &amp; Impact Zones</i>
1030 – 1130	<i>Passive &amp; Active Protections in Design</i>
1130 – 1230	<i>Land Use Planning Around Industrial Sites</i>
1230 – 1245	<i>Break</i>
1245 – 1315	<i>Fire Zone Planning</i>
1315 – 1420	<i>Case Study: Texas City Refinery Explosion</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch &amp; End of Day Four</i>

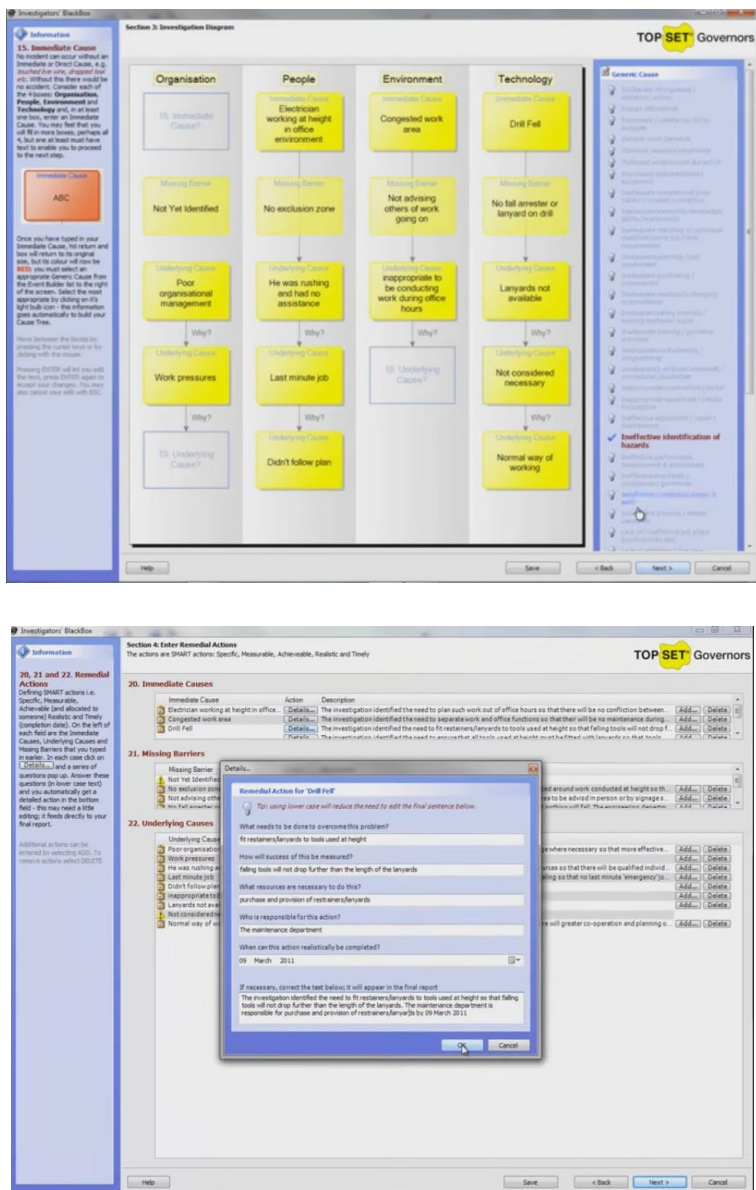
**Day 5: Thursday, 08<sup>th</sup> of February 2024**

0730 – 0830	<i>Fundamentals of Mechanical Integrity</i>
0830 – 0930	<i>Asset Integrity &amp; Reliability</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Non-Destructive Testing Techniques</i>
1030 – 1115	<i>Corrosion Monitoring &amp; Protection</i>
1115 – 1200	<i>Inspection Frequency &amp; Scheduling</i>
1200 – 1215	<i>Break</i>
1215 – 1300	<i>Workshop: Developing an Inspection Checklist</i>
1300 – 1315	<i>Course Conclusion</i>
1315 – 1415	<b>COMPETENCY EXAM - Module 1</b>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch &amp; End of Course</i>



## Simulators (Hands-on Practical Sessions)

Practical session will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the simulator “BlackBox Simulator”; “CAMEO Chemicals Suite Simulator”, “Chemical Compatibility 1.1 Simulator” and “Chemical Safety Database Simulator”.



**Section 3: Investigation Diagram**

Organisation	People	Environment	Technology
15. Immediate Cause? Missing Barriers Not Yet Identified	15. Immediate Cause? Electrician working at height in office environment Missing Barriers No exclusion zone	15. Immediate Cause? Congested work area Missing Barriers Not advising others of work going on	15. Immediate Cause? Drill Fell Missing Barriers No fall arrestor or lanyard on drill
Underlying Cause? Poor organisational management	Underlying Cause? He was rushing and had no assistance	Underlying Cause? Inappropriate to be conducting work during office hours	Underlying Cause? Lanyards not available
Why? Work pressures	Why? Last minute job	Why? 15. Underlying Cause?	Why? Not considered necessary
Why? 15. Underlying Cause?	Why? Underlying Cause? Didn't follow plan		Why? Underlying Cause? Normal way of working

**Section 4: Enter Remedial Actions**

Immediate Cause	Action	Description
15. Immediate Cause	Electrician working at height in office	The investigation identified the need to plan such work out of office hours so that there will be no conflict between...
15. Immediate Cause	Congested work area	The investigation identified the need to separate work and office functions so that there will be no maintenance during...
15. Immediate Cause	Drill Fell	The investigation identified the need to ensure that all tools used at height must be fixed with lanyards or that tools...

**Remedial Action for 'Drill Fell'**

Tip: using lower case will reduce the need to add the final sentence below.

What needs to be done to overcome this problem?  
 fit restrainers/bayards to tools used at height

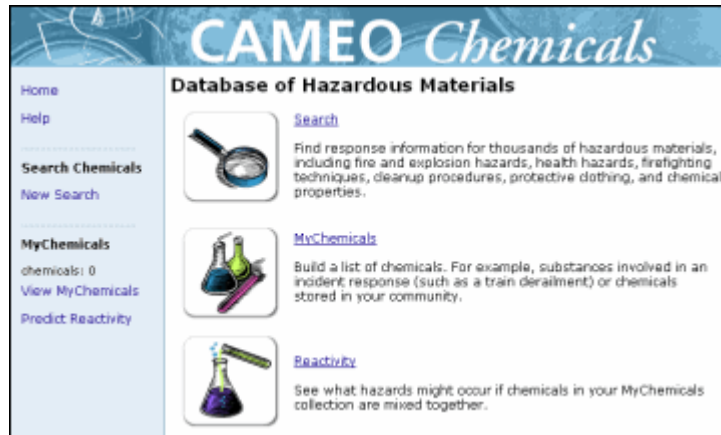
How will success of this be measured?  
 falling tools will not drop further than the length of the lanyards

What resources are necessary to do this?  
 purchase and provision of restrainers/bayards

Who is responsible for this action?  
 the maintenance department

When can the action realistically be completed?  
 09 March 2011

## BlackBox Software Tool



**CAMEO Chemicals Suite Simulator**

Boric Acid Compatibilities	
<b>Acetal (Delrin®)</b>	
Plastics	Excellent
<b>Aluminum</b>	
Metals	Severe Effect
<b>Bronze</b>	
Metals	Good
<b>Buna N (Nitrile)</b>	
Elastomers	Excellent
<b>Carbon graphite</b>	
Non-metals	Excellent
<b>Carbon Steel</b>	
Metal	Severe Effect
<b>Carpenter 20</b>	
Metals	Good/2
<b>Cast iron</b>	
Metals	Severe Effect
<b>Ceramic Al2O3</b>	
Non-metals	Excellent
<b>Ceramic magnet</b>	
Non-metals	Excellent
<b>ChemRaz (FFKM)</b>	
Plastic	Excellent
<b>Copper</b>	
Metals	Good
<b>CPVC</b>	
Plastics	Excellent
<b>EPDM</b>	
Elastomers	Excellent

**Chemical Compatibility 1.1 Simulator**



**Chemical Safety Database Simulator**

**Course Coordinator**

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