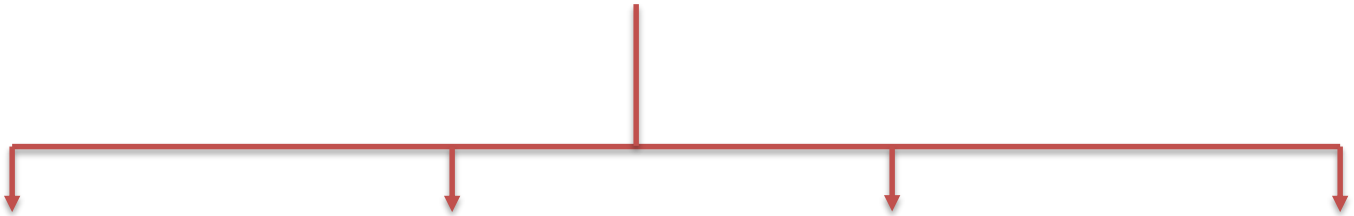
UNIVERSITY CHEMICAL MANAGEMENT

● PROCUREMENT ● STORAGE ● TRANSPORTATION ● DISPOSAL ●

Chemical Management Centre
University Laboratory Management Unit
Universiti Teknologi Malaysia

OUTLINE OF PRESENTATION

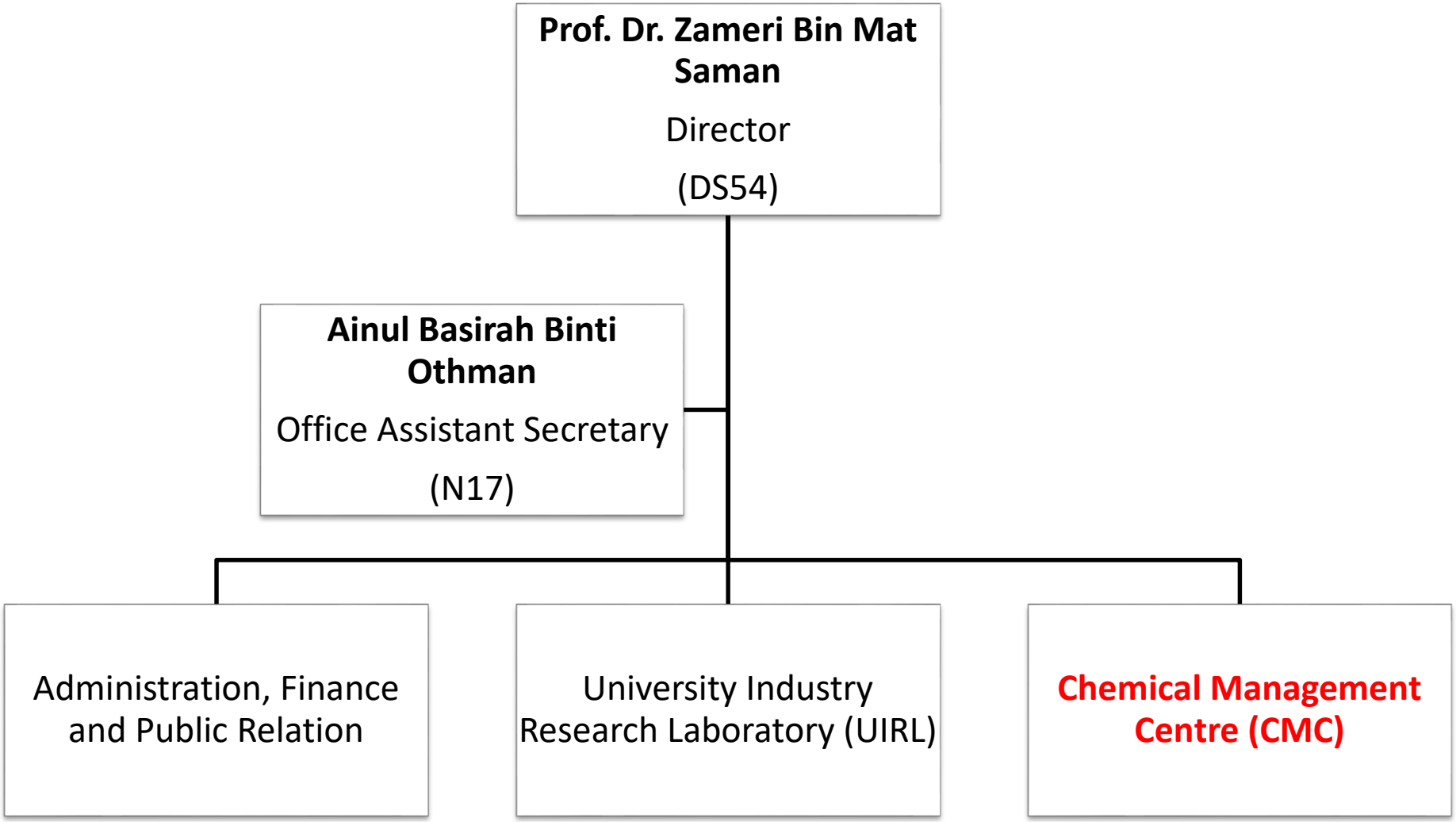
1. INTRODUCTION TO CMC
2. LABORATORY ACCIDENT CASES
3. LAW & REGULATIONS ON CHEMICAL
4. CHEMICAL MANAGEMENT CONCEPT



- PROCUREMENT
- STORAGE
- TRANSPORTATION
- DISPOSAL

5. SOP & GUIDELINES BY CMC
6. AKKP CHECKLIST

- UPMU Structure



- Chemical Management Centre (CMC)

- Was established on January 2012.
- As a platform for chemicals management issue such as:
  - procurement,
  - inventory,
  - distribution,
  - disposal,
  - safety and accreditation, and also
  - coordinate uniformity and partnership.

- Organisation Chart

Prof. Dr Zameri Bin Mat Saman
UPMU Director (DS54)

Dr Mohd Firdaus Bin Abdul Wahab
CMC Manager (DS52)

Nursyazwani Binti Aznan
Science Officer (CA41)

Norlin Binti Arsad
Asst. Science Officer (CA29)

Norlaili @ Mohd Noor Bin Ahmad
Asst. Engineer (CA29)

Mohd Haziq Bin Mahmad Toha
Laboratory Asst.(CA17)

- Appointed Officers (Faculties)

Procurement Officers

No.	Fakulti	Pegawai Perolehan
1	Fakulti Sains (Jabatan Kimia)	Pn. Suhani Bt. Md Tah
2	Fakulti Sains (T05)	En. Dinda Ahmad Hairol Rosdi
3	Fakulti Sains (Jabatan Fizik)	Pn. Anisah Bt. Salikin
4	Fakulti Biosains & Kejuruteraan Perubatan (FBME) - T02	Pn. Amalina Bt. Ramli
5	Fakulti Biosains & Kejuruteraan Perubatan (FBME) - V01	Pn. Wan Syafiqah Muhammad
6	Fakulti Kejuruteraan Tenaga (FKT)	En. Hafzan Bin Saidin
7	Fakulti Kejuruteraan Tenaga (FKT)	En. Zulkifli Bin Mansor
8	Fakulti Kejuruteraan Awam (FKA)	Pn. Nurul Syuhada Bt. Sadikon
9	Fakulti Kejuruteraan Mekanikal (FKM)	En. Ayub Bin Abu
10	Fakulti Kejuruteraan Elektrik (FKE)	En. Mohammad bin Amzah

Disposal of Scheduled Wastes Officers

No.	Fakulti	Pegawai Pelupusan
1	Fakulti Sains (Jabatan Kimia)	En. Mohd. Amin Derani
2	Fakulti Sains (T05)	Puan Nurul Hajar Sapiren
3	Fakulti Sains (Jabatan Fizik)	En. Bakhtiar Mat Sari dan Puan Anisah Salikin
4	Fakulti Biosains & Kejuruteraan Perubatan (FBME) - T02	En. Mohd Hasrul Ishak
	Fakulti Biosains & Kejuruteraan Perubatan (FBME) - V01	En. Mokhtar Abu Bakar
5	Fakulti Kejuruteraan Tenaga (FKT)	En. Ahmad Bokhairy Borhan
7	Fakulti Kejuruteraan Awam (FKA)	
8	Fakulti Kejuruteraan Mekanikal (FKM)	En Ayub bin Abu
9	Fakulti Kejuruteraan Elektrik (FKE)	En. Mohammad bin Amzah

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

KALENDAR AKTIVITI 2018
PUSAT PENGURUSAN BAHAN KIMIA

No.	Bulan / Aktiviti/Proses	1	2	3	4	5	6	7	8	9	10	11	12	Catatan
1.	Permohonan Bahan Kimia P & P – Sem II 2017/2018	■												Penghantaran borang oleh PTJ : 31 Dis 2017 – 4 Jan 2018
2.	Mesyuarat Penyelarasan Pengurusan Bahan Kimia Universiti	■												Penglibatan : SHO, Peg. Stor, OSHE. 17 Jan 2018
3.	Taklimat Perlaksanaan SW (Peringkat 1) – Jadual 1, Jadual 3 & Jadual 7		■											Penglibatan : PTJ Sasaran. 12 Feb 2018
4.	Taklimat Keselamatan Bahan Kimia kepada mahasiswa baru di Fakulti		■	■										Sekitar Feb – Mac Bergantung kepada permintaan fakulti.
5.	Program Kesedaran: Pelaksanaan USECHH 2000 dalam Pengurusan Bahan Kimia Berbahaya			■										Sasaran peserta : Terbuka. 13 Mac 2018.
6.	Pelupusan Sisa Bahan Kimia Berbahaya – Kitaran 1				■									Pemeriksaan : 2 April 2018 Aktiviti Pengumpulan : 3-4 April 2018
7.	Penghantaran Dokumen Daftar Bahan Kimia Berbahaya & Inventori Bahan Kimia PTJ – Kitaran 1				■									Penghantaran oleh PTJ : 22 April 2018 – 26 April 2018
8.	Program Kesedaran : Akta Racun 1952					■								Sasaran Peserta : Wakil PTJ. 3 Mei 2018
9.	Permohonan Bahan Kimia P & P – Sem I 2018/2019						■							Penghantaran borang oleh PTJ : 3 Jun 2018 – 7 Jun 2018
10.	Program Kesedaran: Chemical Weapon Convention Act 2005							■						Sasaran peserta : Terbuka. 5 Julai 2018
11.	Pelupusan Sisa Bahan Kimia Berbahaya – Kitaran 2								■					Pemeriksaan : 13 Ogos 2018 Aktiviti Pengumpulan : 14-15 Ogos 2018
12.	Taklimat Perlaksanaan SW (Peringkat 2) – Jadual 1, Jadual 3 & Jadual 7									■				Penglibatan : PTJ Sasaran. 6 Sept 2018
13.	Penghantaran Dokumen Daftar Bahan Kimia Berbahaya& Inventori Bahan Kimia PTJ – Kitaran 2										■			Penghantaran oleh PTJ : 7 Okt 2018 – 11 Okt 2018
14.	Permohonan Bahan Kimia P & P – Sem II 2018/2019												■	Penghantaran borang oleh PTJ : 30 Dis 2018 – 3 Jan 2019

- Perubahan tarikh bergantung kepada keadaan semasa.

LABORATORY ACCIDENT CASES

ACCIDENTS AT OTHER UNIVERSITIES

http://www.ehs.ucsb.edu/labsafety/laboratory-accidents

University of Hawai (2006) : Spark from pressure gauge caused explosion - steel tank ruptured which caused Postdoc researcher Thea Ekins-Coward lost an arm.

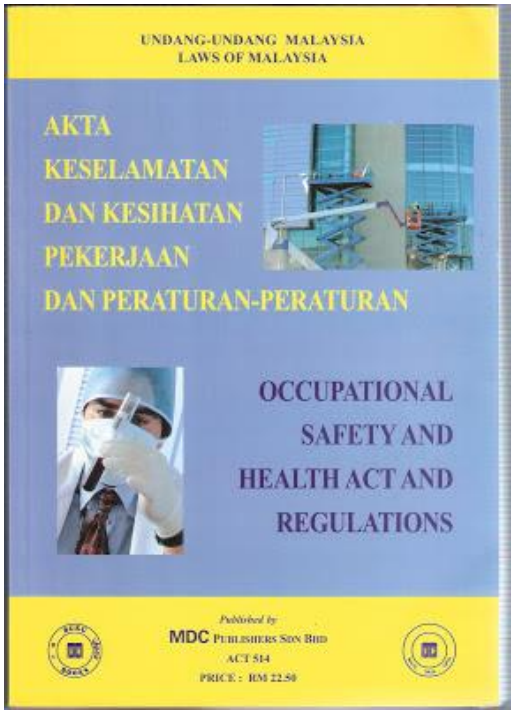
- UCI Major Lab Fire
- UCLA Lab Fire Fatality
- New UCLA Center for Laboratory Safety
- UCLA settlement agreement w/ OSHA for lab fatality
- Fire Destroys OSU Lab
- Chemical stored on the floor causes UC Santa Cruz Lab Fire
- Lab Fire University of Texas-1996
- Professor Fired for Safety Violations
- Sodium Quenching Injury
- Working Alone in Lab- Incident
- Chemical Demonstration Injures Students
- Hawaii U fined 1.2 million for Hazardous Waste Violations
- Mercury Poisoning Fatality in Laboratory
- HF Poisoning Fatality
- Chemical Fume Hood Fire
- Other Lab Accidents Link
- Serious injuries in Texas Tech lab explosion
- Fatality in Yale Chemistry machine shop
- Professor barred from lab for dangerous experiments

LAWS & REGULATIONS ON CHEMICAL

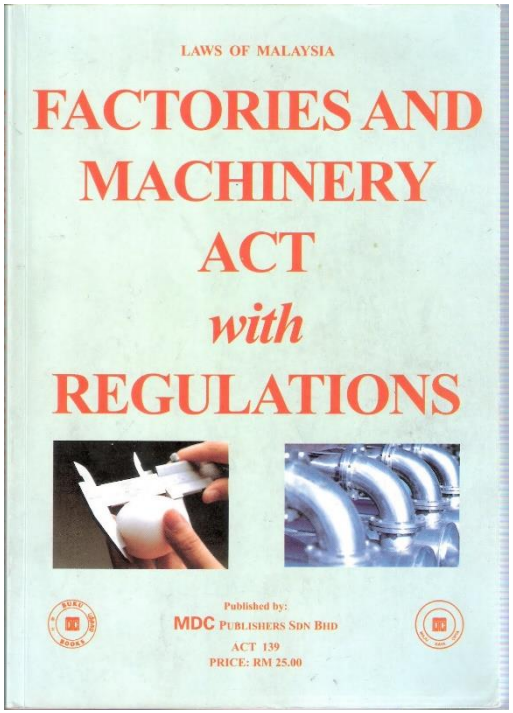
LOCAL LAWS & REGULATIONS ON CHEMICALS

1. FMA (Factories & Machinery Act) 1967
2. OSHA (Occupational Safety & Health Act) 1994
3. EQA (Environmental Quality Act) 1974
4. Pesticides Act 1994
5. Poison Act 1952 & Regulations
6. Atomic Energy Licensing Act 1984
7. Sales of Drugs Act 1952
8. Gas Supply Act 1993 & Gas Supply Regulations 1997
9. Uniform Building By-Laws 1984

OSHA 1994



FMA 1967



Department of Occupational Safety & Health
Ministry of Human Resources

USECHH REGULATION 2000

- 17 requirements listed under USECHH Regulation 2000.

1. Identification of chemical	2. Chemical Register	3. PELs	4. CHRA	5. PPE
6. Engineering control	7. LEV approval	8. LEV test	9. Record of eng. control	10. Labelling & Relabelling
11. Information, Instruction & Training	12. SDS	13. Exposure Monitoring	14. Health Surveillance	15. Medical Removal Protection
16. Warning Sign	17. Record Keeping			

CHEMICAL MANAGEMENT CONCEPT

Transport

Disposal

Procurement

Storage

DEFINITION

- What is chemicals?

“Chemicals" means chemical elements, or compounds or mixtures thereof, whether natural or synthetic, but does not include micro-organisms

“Chemicals hazardous to health" means any chemical or preparation which –

(a) is listed in Schedule I or II;

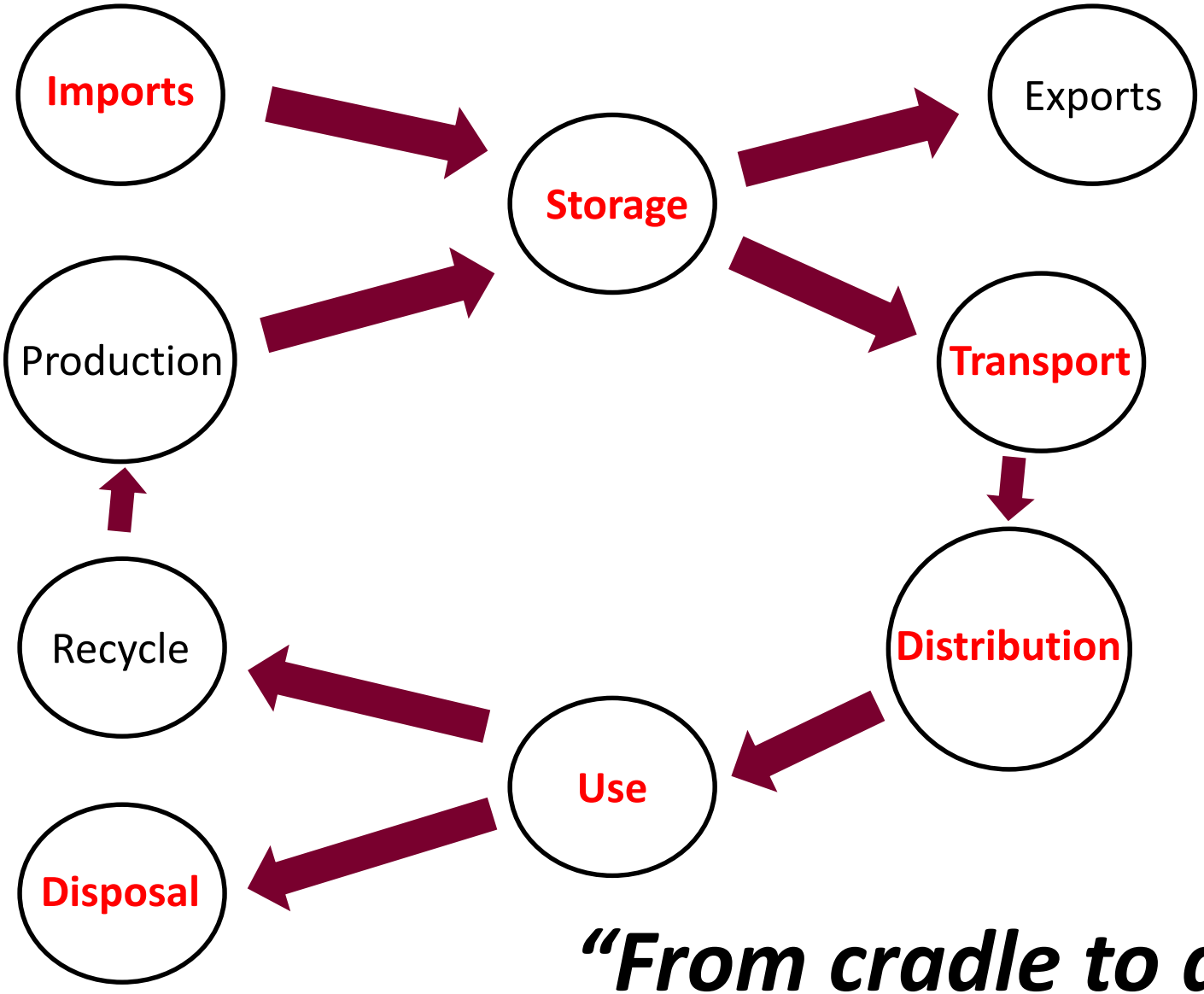
(b) possesses any of the properties categorised in Part B of Schedule I of the Occupational Safety and Health (Classification, Packaging and Labelling of Hazardous Chemicals) Regulations 1997 [P. U. (A) 143/97];

(c) comes within the definition of "pesticide" under the Pesticides Act 1974 [Act 149]; or

(d) is listed in the First Schedule of the Environmental Quality (Schedule Wastes) Regulations 1989 [P. U. (A) 139/89];

Reference :
Occupational Safety and Health (Classification, Packaging and Labelling of Hazardous Chemicals) Regulations 1997 [P. U. (A) 143/97]

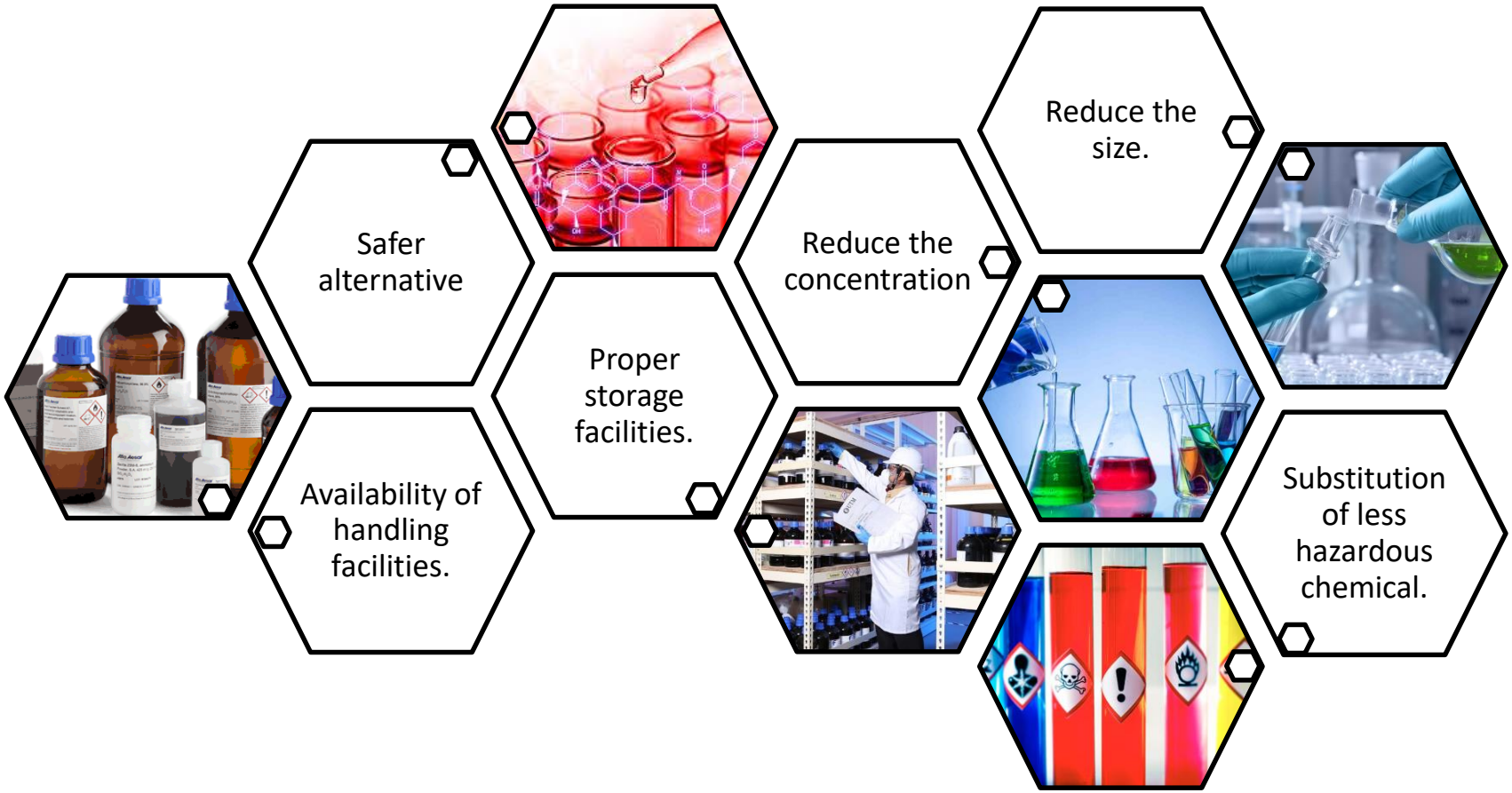
LIFECYCLE OF CHEMICAL



"From cradle to grave"

PROCUREMENT OF CHEMICALS

- <u>Consideration before purchasing chemicals :</u>



- Current procedures :

Teaching & Learning

- Allocation :
  - 2017 – RM 530K
  - 2018 – RM 275K
- Application : twice per year

Research

- Instruction from SRAD UTM.
- Started from Sem 1 2017/2018
- Phd : 5K
- Master : 3K

- Flowchart of procurement for P&P.

Lecturer/staff submit application form to Procurement Officer (Faculty)

Procurement Officer (Faculty) filter & submit application form to CMC.

CMC filter application & proceed procurement to supplier.

Supplier process the order & deliver to CMC.

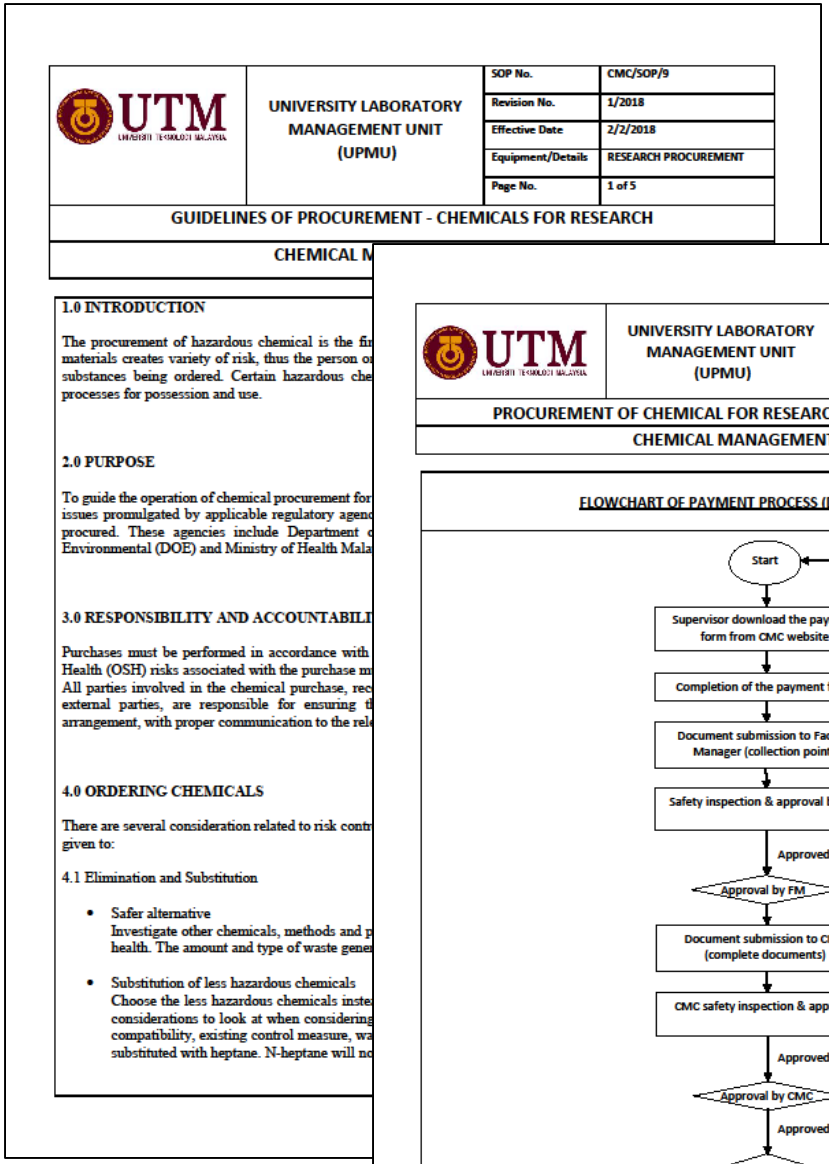
CMC receive chemicals from supplier and distribute to Procurement Officer (Faculty)

Procurement Officer (Faculty) distribute to applicants.

Lecturer/staff receive the chemical order.

Bench Fees for International Postgraduate Students

1. Research Procurement Guideline.
2. Flowchart of Application Process.
3. CMC Application Form for Research.
4. Flowchart of Payment Process.
5. CMC Payment Form for Research.



UTM UNIVERSITY LABORATORY MANAGEMENT UNIT (UPMU)

SOP No.	CMC/SOP/9
Revision No.	1/2018
Effective Date	2/2/2018
Equipment/Details	RESEARCH PROCUREMENT
Page No.	1 of 5

GUIDELINES OF PROCUREMENT - CHEMICALS FOR RESEARCH

CHEMICAL M

1.0 INTRODUCTION

The procurement of hazardous chemical is the fir
materials creates variety of risk, thus the person o
substances being ordered. Certain hazardous che
processes for possession and use.

2.0 PURPOSE

To guide the operation of chemical procurement for
issues promulgated by applicable regulatory agenc
procured. These agencies include Department
Environmental (DOE) and Ministry of Health Mala

3.0 RESPONSIBILITY AND ACCOUNTABILI

Purchases must be performed in accordance with
Health (OSH) risks associated with the purchase m
All parties involved in the chemical purchase, rec
external parties, are responsible for ensuring t
arrangement, with proper communication to the rel

4.0 ORDERING CHEMICALS

There are several consideration related to risk contr
given to:

4.1 Elimination and Substitution

- Safer alternative
  Investigate other chemicals, methods and p
  health. The amount and type of waste gene
- Substitution of less hazardous chemicals
  Choose the less hazardous chemicals inste
  considerations to look at when considering
  compatibility, existing control measure, wa
  substituted with heptane. N-heptane will n

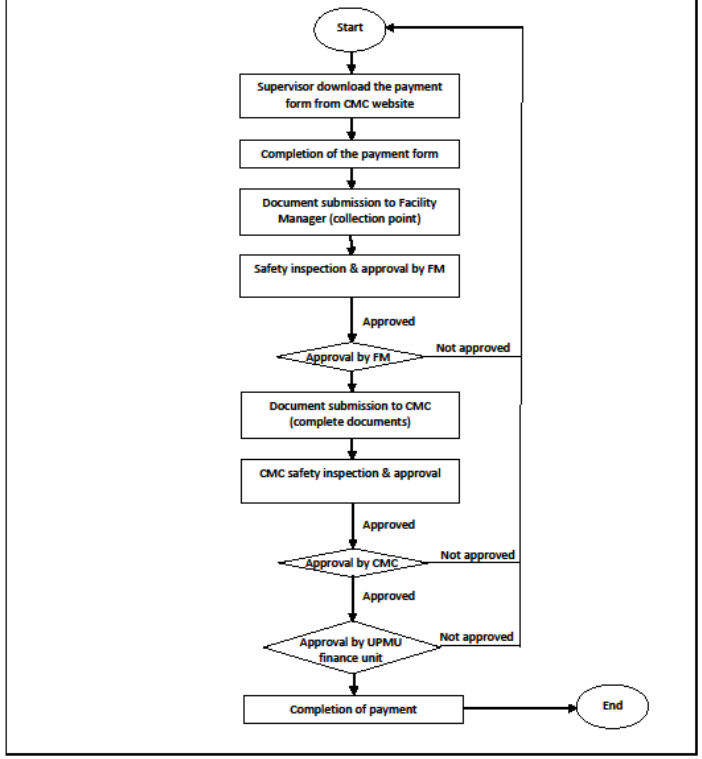
UTM UNIVERSITY LABORATORY MANAGEMENT UNIT (UPMU)

Form No.	CMC/FC/2
Revision No.	1/2018
Effective Date	2/2/2018
Details	PAYMENT FLOWCHART (R)
Page No.	1 of 2

PROCUREMENT OF CHEMICAL FOR RESEARCH – PAYMENT FLOWCHART

CHEMICAL MANAGEMENT CENTRE

FLOWCHART OF PAYMENT PROCESS (DIRECT PURCHASE)



CHEMICAL MANAGEMENT CENTER UTM

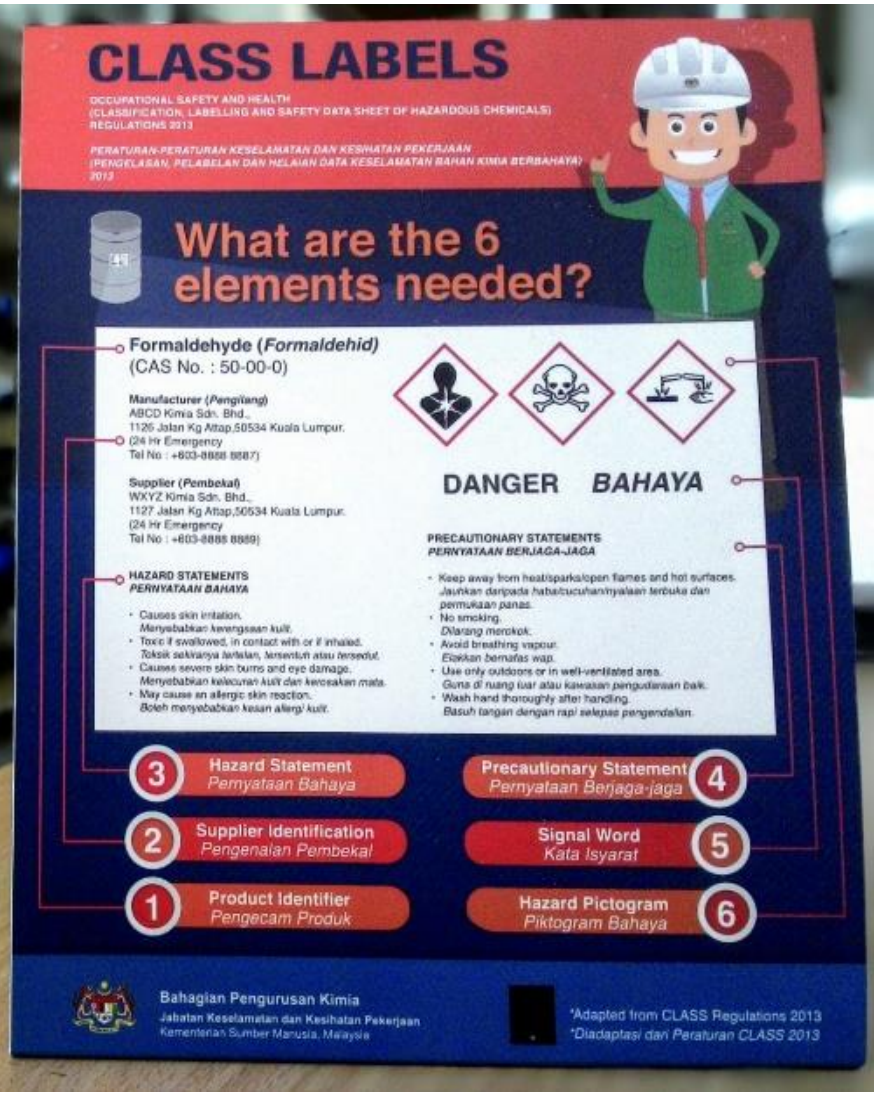
CLASS LABELS 2013

PLEASE MAKE SURE ALL CHEMICALS PURCHASED FOR TEACHING AND RESEARCH PURPOSES ADHERE TO THE CLASS 2013 REGULATIONS.

A supplier shall label every packaging of a hazardous chemical legibly & indelibly containing the following information:

1. the product identifier;
2. the supplier identification;
3. the signal word;
4. the hazard statement;
5. the hazard pictogram; and
6. the precautionary statement.

Occupational Safety & Health (Classification, Labelling & Safety Data Sheet of Hazardous Chemicals) Regulations 2013



Example of CLASS Regulations Label

Product Identifier

UNLEADED GASOLINE-Premium Grade
PETROL TANPA PLUMBUM-GRED PREMIUM
Hydrocarbon (Hidrokarbon) > 99% Benzene (Benzena) < 1%

Hazard Pictogram

DANGER

BAHAYA

Signal Word

Hazard Statement

HAZARD STATEMENT
Extremely flammable liquid and vapour
Toxic if inhaled
Causes skin and eye irritation
Suspected of causing cancer (inhalation)

PERNYATAAN HAZARD
Cecair dan wap teramat mudah bakar
Toksik jika tersedut
Menyebabkan kerengsaan kulit dan mata
Disyaki menyebabkan kanser (tersedut)

Precautionary Statement

PRECAUTIONARY STATEMENT
Keep away from heat/sparks/open flames/hot surfaces- No smoking.
Avoid breathing vapour.
Use only outdoors or in a well-ventilated area.
Wash hands thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

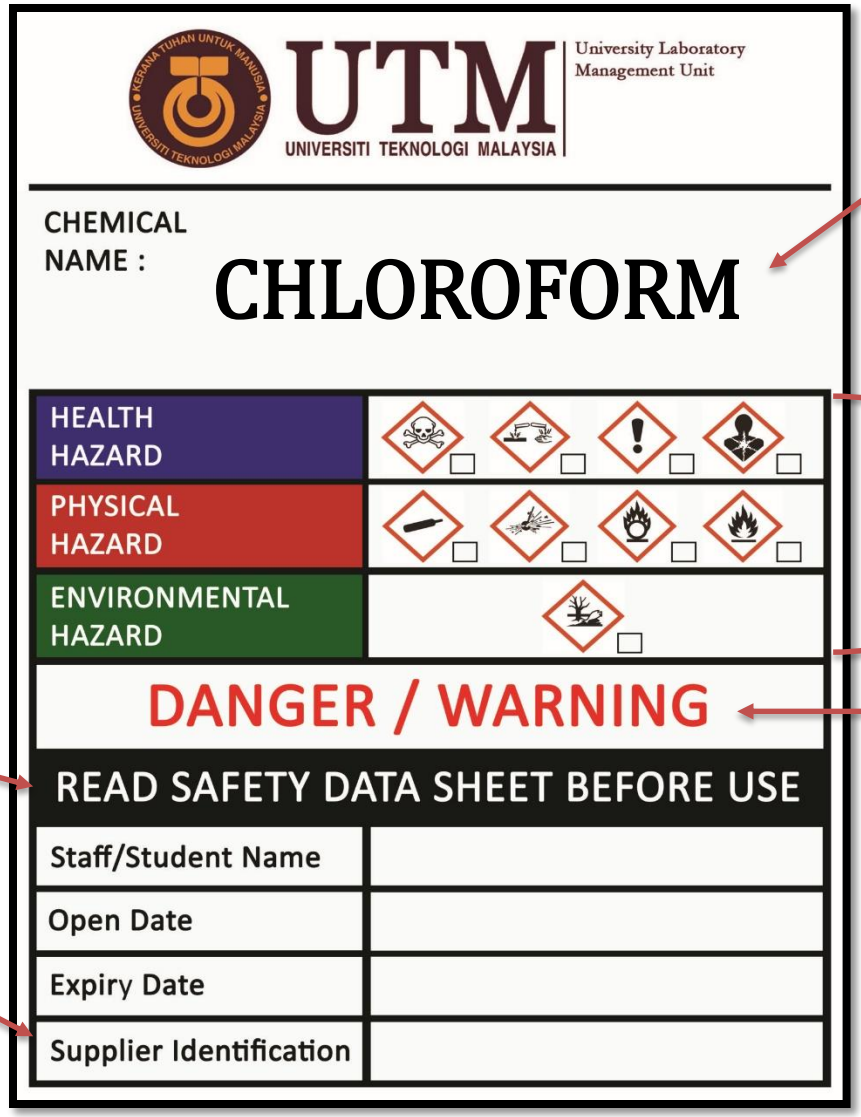
PERNYATAAN BERJAGA-JAGA
Jauhkan dari haba/percikan api/nyalaan terbuka/permukaan panas-Dilarang merokok.
Elakkan daripada menyedut wap.
Gunakan hanya di luar bangunan atau di dalam kawasan yang dialihudarakan dengan baik.
Basuh tangan bersih-bersih selepas mengendalikan bahan.
Dapatkan arahan khas sebelum menggunakan bahan.
Jangan kendalikan bahan sehingga semua langkah berjaga-jaga keselamatan telah dibaca dan difahami.

Supplier Identification

Manufacturer: (Pengilang) Oil Company, 515 Touhy Avenue, Des Plaines, IL 60018 USA. (24 hr Emergency Tel. No: 800 424-9300)

Supplier: (Pembekal) Syarikat Minyak Petrol Sdn. Bhd., 1126K Jalan Kg. Attap, 50534 Kuala Lumpur (Tel : 03- 273 1234, 800-1234567)

For a container of 125 ml and below, the packaging shall be labelled legibly and indelibly containing the following information :



a) The product identifier

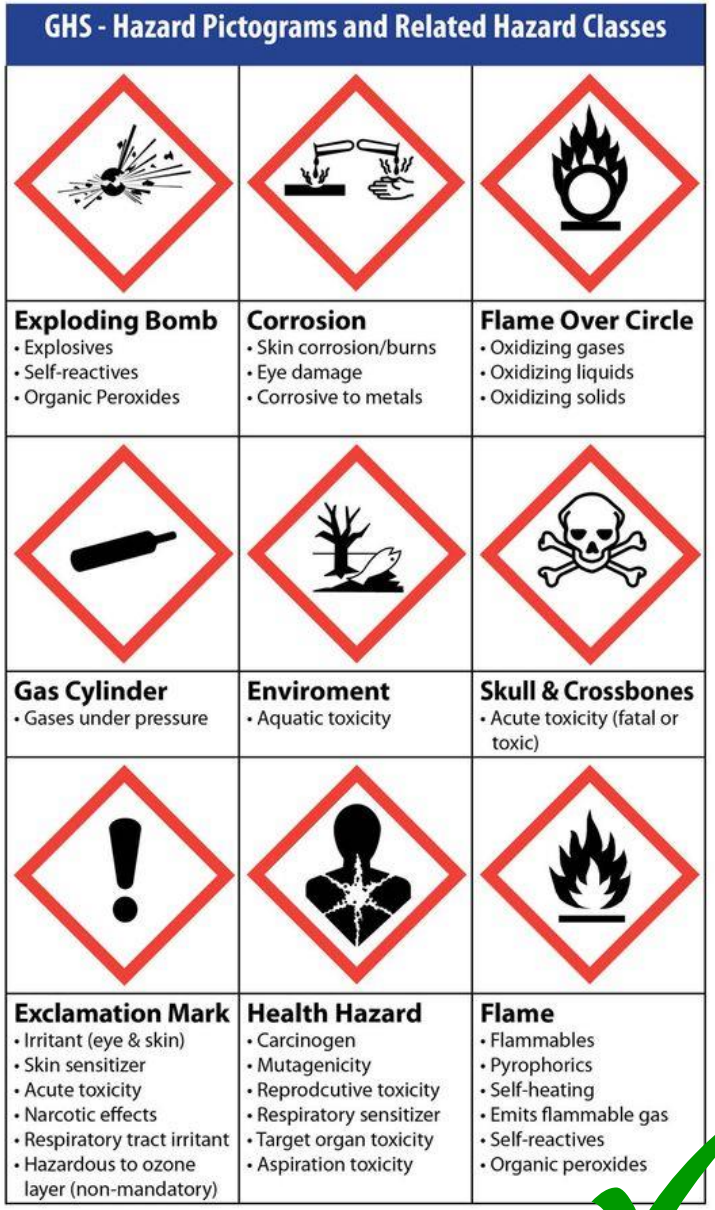
d) The hazard pictogram

c) The signal word

e) A statement which reads :

b) The supplier identification

Correct Pictogram



Correct Format Of Safety Data Sheet

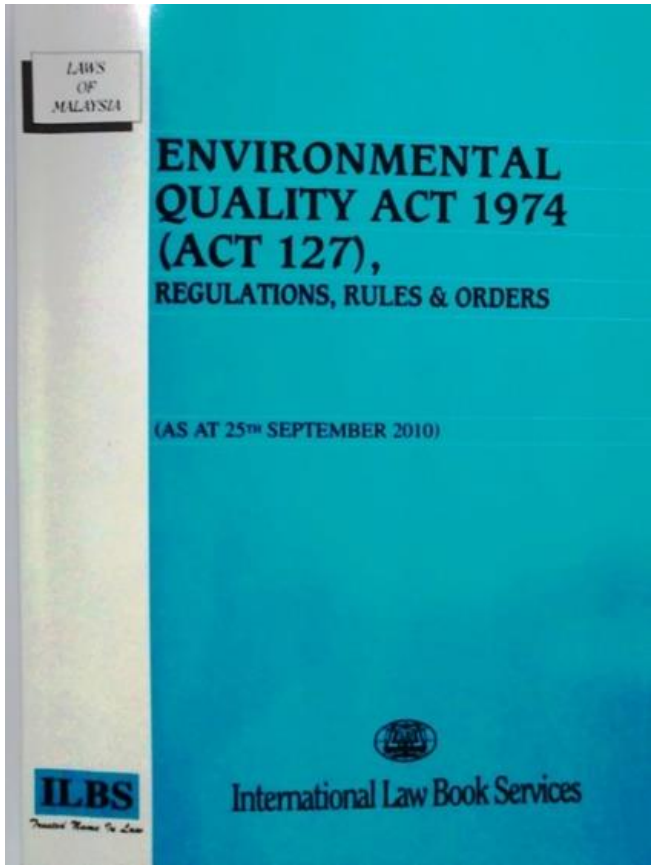
Section 1: Identification of the hazardous chemical and of the supplier.	Section 9: Physical and chemical properties.
Section 2: Hazard Identification.	Section 10: Stability and reactivity.
Section 3: Composition and information of the ingredients of the hazardous chemicals.	Section 11: Toxicology information.
Section 4: First-aid measures.	Section 12: Ecological information.
Section 5: Fire-fighting measures.	Section 13: Disposal information.
Section 6: Accidental release measures.	Section 14: Transportation information.
Section 7: Handling and storage.	Section 15: Regulatory information.
Section 8: Exposure controls and personal protection.	Section 16: Other information.

- On receipt of the chemicals, use this checklist to inspect :

Y/N	Aspect
✓	The special requirements of the chemicals are met. Example: refrigerator, secure/locked storage/receipt only to an authorised person.
✓	Delivered chemicals is as described when ordered.
✓	Packaging is free from contamination.
✓	Delivered chemicals has clear labelling comply with CLASS 2013 Regulations.
✓	Invoice and delivery order is provided for finance purposes.

Y/N	Aspect
✓	Update the Chemical Inventory and Chemical Register.
✓	Ensure the current SDS is accessible.
✓	Write date of receipt on chemical container.
✓	Store the chemicals correctly and safely.

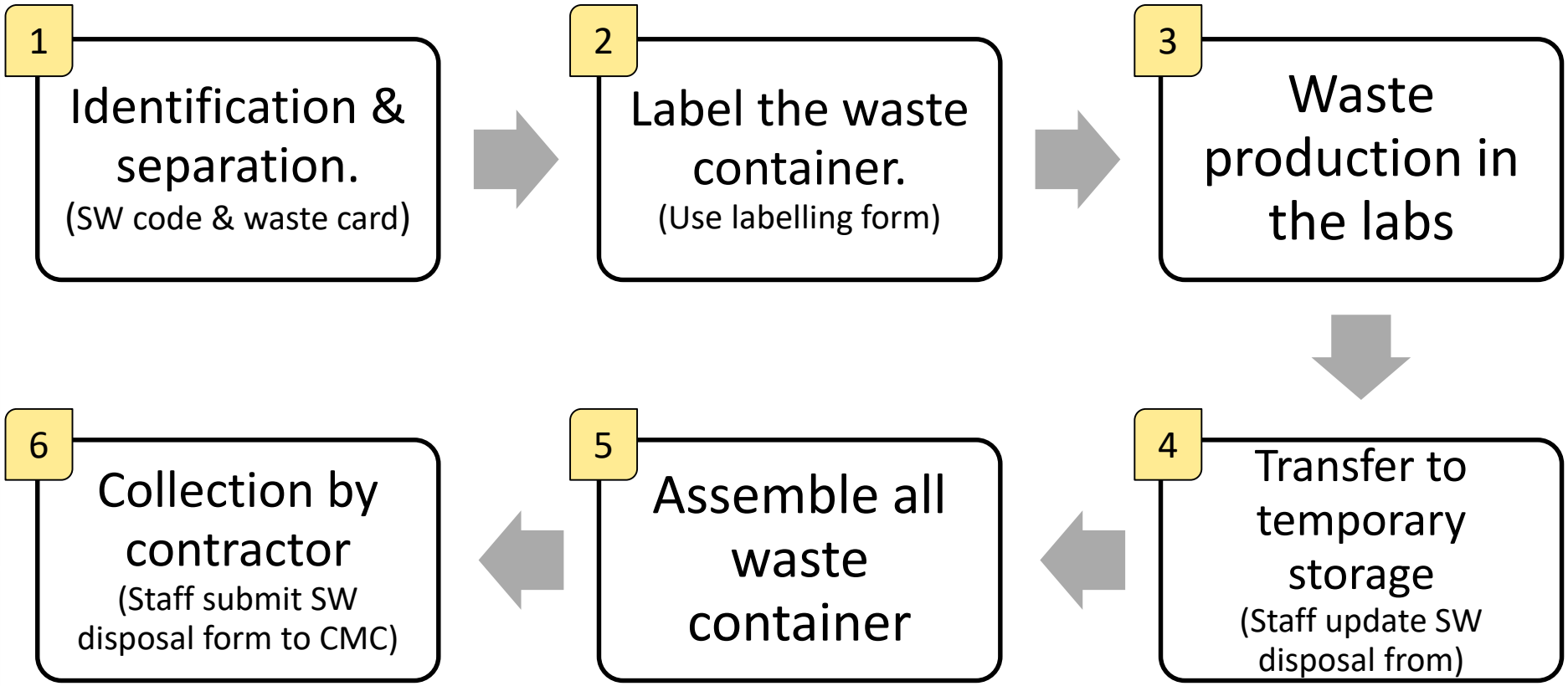
DISPOSAL OF CHEMICALS



ENVIRONMENTAL QUALITY (SCHEDULED WASTES) REGULATIONS 2005

Department of Environment
Ministry of Natural Resources & Environment

- CHEMICAL DISPOSAL FLOW CHART



Scheduled 1 – Identification of SW

Schedule 3 - Labelling

Schedule 7 – Waste Card Information

SW CODE
POSITIVE CHEMICALS SDN BHD

Name of Sludge	Code
Waste of non-halogenated	SW 322
Waste of halogenated organic solvents	SW 323
Waste of Inks, Paints, Pigments, Lacquer, dye or varnish	SW 417
Discarded or off-specification Ink, Paint, Pigment, Lacquer, dye or varnish products containing organic solvents	SW 418
Disposed containers, bags or equipment contaminated with chemicals, minerals oil or schedule waste	SW 409
Spent alkaline	SW 402
Spent inorganic acids	SW 206
Cotton Rag	SW 416
Spent organic acid	SW301
Spent mineral oil-water emulsion	SW 307
Sludge containing one or several metals including chromium, copper, nickel, zinc, lead, cadmium, aluminium, tin, vanadium, Beryllium	SW 204

Labelling form

UTM UNIVERSITI TEKNOLOGI MALAYSIA

PUSAT PENGURUSAN BAHAN KIMIA (CMC)
UTM JOHOR BAHRU
TEL : 07 - 5510232/ 57779

http://www.utm.my/cmc

NAMA BAHAN BUANGAN :

KUANTITI : *liter / gelen / kg*

KATEGORI HAZAD

(Tanda (✓) pada yang berkenaan)

☐  *TOXIC*

☐  *FLAMMABLE*

☐  *CORROSIVE*

☐  *HARMFUL*

☐ **Lain - lain (nyatakan)**

.....

KATEGORI SISA

(Tanda (✓) pada yang berkenaan)

☐ **SW 301** *(Spent Acid)*
☐ **SW 322** *(Non Halogenated)*
☐ **SW 323** *(Halogenated)*
☐ **SW 402** *(Spent Alkaline)*
☐ **SW 409** *(Contaminated Container)*
☐ **SW 410** *(Contaminated Rag)*
☐ **Lain - lain** *(Nyatakan)*

.....

MAKLUMAT PENJANA SISA

Fakulti :

Makmal / Bengkel :

Peg. Bertanggungjawab : **No. Telefon** :

SW disposal form

UTM UNIVERSITI TEKNOLOGI MALAYSIA

PUSAT PENGURUSAN BAHAN KIMIA (CMC)
T03, Unit Pengurusan Makmal Universiti,
81310, UTM Johor Bahru, Johor
Tel : 07-5557713 / 5600

BORANG PERMOHONAN UNTUK MELUPUS BAHAN BUANGAN TERJADUAL

Nota : Pemohon dikehendaki melengkapkan semua butiran di bahagian yang disediakan dan serahkan kepada Unit OSHE selepas proses pengutipan selesai. Sila buat satu salinan untuk simpanan dan rujukuan Jabatan/Bahagian.

BAHAGIAN A : MAKLUMAT PEMOHON

Nama Pemohon : Tel. No. / Samb :

Tandatangan : Tarikh :

BAHAGIAN B : LOKASI

Fakulti / Bahagian : No. Bilik & Blok :

Makmal / Bengkel :

BAHAGIAN C : BUTIRAN BAHAN BUANGAN TERJADUAL *(* Sila lihat panduan)*

Bil.	Nama Bahan	* Jenis	* Pembungkusan	Kuantiti	* No. Kod SW

Panduan : *Jenis : **P** - Pepejal, **C** - Cecair, **G** - Gas, **E** - Enap Cemar

*Pembungkusan : **K** - Kaca, **P** - Plastik, **L** - Logam

: *No. Kod Kategori Buangan (SW) - Lihat Lampiran di Label Sisa

DURING ACTIVITIES

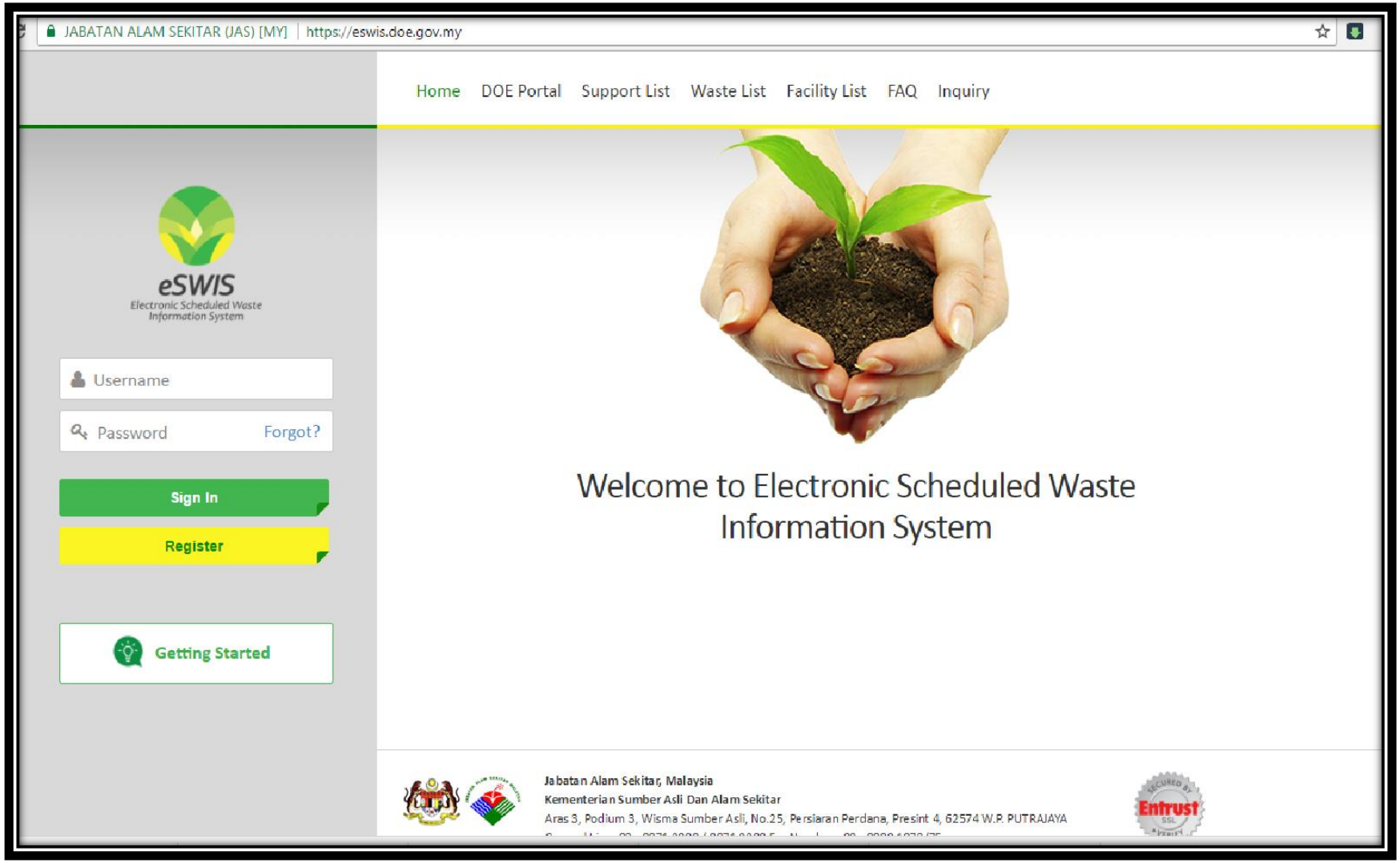
- FKT

- T05 FS

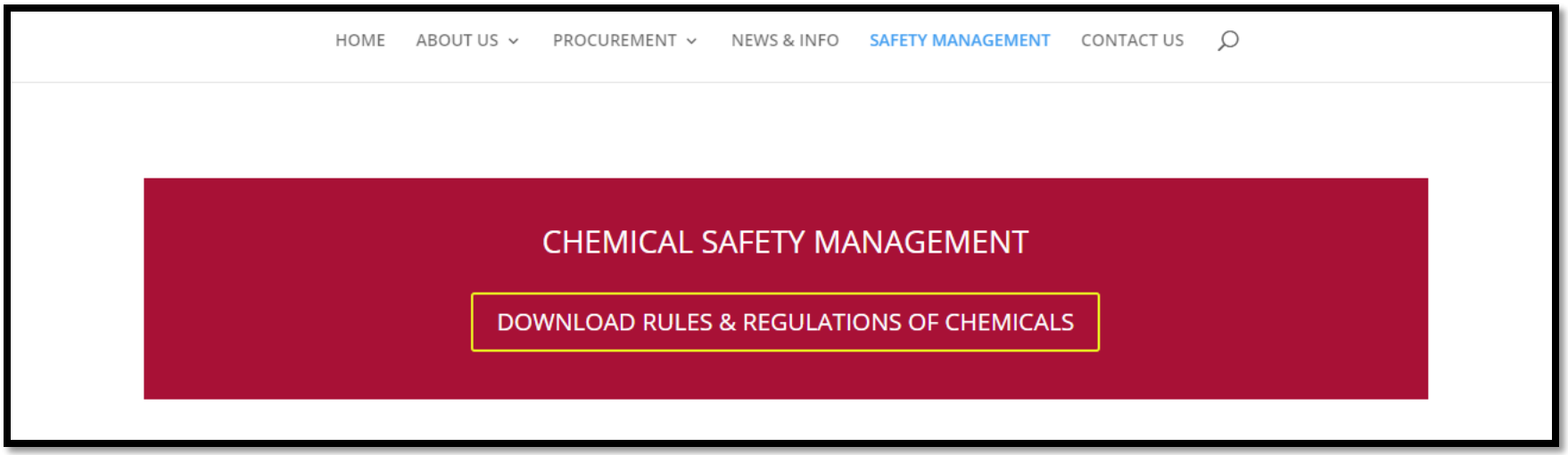
- FKT

- V01 FBME

- **Report update to DOE (every month).**



SOP & GUIDELINES BY CMC



http://www.utm.my/cmc/legislation/

STANDARD OPERATING PROCEDURE, GUIDELINES ON CHEMICAL HANDLING, CHEMICAL SPILLAGE & TRANSPORTATION

UTM	UNIVERSITY LABORATORY MANAGEMENT UNIT (UPMU)	SOP No.	CMC/SOP/7
		Revision No.	1/2017
		Effective Date	3/1/2017
		Equipment/Details	CHEMICAL SPILLAGE
		Page No.	1 of 8

STANDARD OPERATING PROCEDURES ON HANDLING SPILLS OF HAZARDOUS CHEMICALS

CHEMICAL MANAGEMENT CENTRE

INTRODUCTION

Safety is of utmost importance in our laboratories. Although work in the laboratory is planned so that exposures to potentially hazardous chemicals will not happen, an accidental spill can happen at any time. The purpose of this SOP is to outline the steps necessary to manage a chemical spill or splash. With appropriate equipment, procedures and training, most spills can be prevented, and any spills that do take place can be handled safely and effectively.

SCOPE

This SOP is applicable to staff and students in the event of a chemical spill or splash.

RESPONSIBILITY AND ACCOUNTABILITY

Although laboratory workers are trained and knowledgeable in the safe use and handling of chemicals in the laboratory, each worker must establish safe work practices to minimize the risk of chemical spillage from occurring. They must also be adequately prepared to handle a chemical spill. The inability to handle a spill no matter how minor the problem, could seriously endanger the safety and health of the laboratory worker and others, and the environment.

All laboratories should have a **chemical spill kit** on site in an accessible place, clearly labelled and ready for use. In the event of a chemical spill, it is the responsibility of the person handling the chemical to ensure that recommended spills handling procedures are followed. Knowledge of the basic guidelines involving chemical spills and splashes go a long way toward meeting that responsibility. All spill accidents must be reported to the Faculty/Centre Safety Committee and UTM OSHE Unit.

UTM	UNIVERSITY LABORATORY MANAGEMENT UNIT (UPMU)	SOP No.	CMC/SOP/5
		Revision No.	1/2017
		Effective Date	3/1/2017
		Equipment/Details	COMPRESSED GAS
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GUIDELINES ON SAFE HANDLING AND STORAGE OF COMPRESSED GASES

CHEMICAL MANAGEMENT CENTRE

Compressed gases are widely used in both teaching and research laboratories across UTM. The pressure at which gases are contained in gas cylinders can be extremely high, which makes it hazardous if improperly handled. The main hazard from gas cylinders arises from the large amount of stored energy they contain due to the pressure of the compressed gas within them. If the pressurised gas is released in an uncontrolled manner, this can cause considerable damage. Uncontrolled release and flying particles (including the cylinder itself) can occur from failure of the cylinder or its fittings and may arise if it is involved in a fire or it suffers damage in a collision. Gas cylinders also present a hazard from their contents which, even if not directly hazardous by nature of their flammable, toxic, corrosive or oxidising properties, can still cause an asphyxiant hazard by displacing oxygen. The inherent weight and size of cylinders may also present a physical hazard during transport and manual handling or if they topple.

The main causes of accidents from gas cylinders are:

- Poor storage
- Poor handling
- Poor installation
- Faulty equipment and / or design (e.g. Faulty or incorrectly fitted/specified valves and regulators)
- Poor examination and maintenance
- Unplanned releases of gas
- Hidden damage
- Inadequate training and supervision.

This Guidelines provide basic safety precautions to be taken when handling and storing compressed gas cylinders. The Safety Data Sheet must always be referred to for detailed explanations of these safety aspects. LPG usage is not covered in this Guidelines.

UTM	UNIVERSITY LABORATORY MANAGEMENT UNIT (UPMU)	SOP No.	CMC/SOP/1
		Revision No.	1/2017
		Effective Date	3/1/2017
		Equipment/Details	CHEMICALS TRANSPORTATION
		Page No.	1 of 3

GUIDELINES FOR SAFE TRANSPORTING OF CHEMICALS ON CAMPUS

CHEMICAL MANAGEMENT CENTRE

Students and researchers should be aware that many materials used in the laboratory are dangerous and risky. Transporting chemicals is one of the riskiest procedures that takes place in the laboratory and around campus as it may lead to accidental release and exposure of chemicals. However, by taking the right pre-cautions and procedures while handling and transporting chemicals, you can minimize the danger to yourself, others and the environment.

The Chemical Management Centre (CMC) has established the following guidelines as the minimum acceptable practices for transporting hazardous chemicals on campus. The following guidelines shall be followed when moving chemicals on campus:

1. Chemical user must read the Safety Data Sheet (SDS) before handling any chemicals. Determine the proper shipping name/basic description on transportation of chemicals as provided in the SDS. Individuals transporting chemicals must be familiar with the hazards presented, and know what to do in the event of incidents such as instant release or spillage.
2. Wear appropriate Personal Protective Equipment (PPE) while transporting the chemicals. Lab coat, safety glasses, chemical resistant gloves are some of the PPE that should be worn if hazardous chemicals might splash on skin or eyes if spilled during transport.
3. Label all chemical containers as to their contents.
4. Hazardous chemicals must be attended at all times while being transported.
5. Use secondary container that are capable of containing all materials in the event of breakage or spillage.
6. Do not place incompatible chemicals together in the same container during movement. For example chromic acid (oxidizing acid) and ethyl acetate (flammable liquid) should not be transferred on the same cart. This will prevent unwanted chemical reactions in the events of leaks or spillage.
7. Transport only the minimum amount of material in the lowest concentration commensurate with the demonstration or educational activities.
8. Plan route and destinations to minimize travel time and distance while transporting hazardous materials.
9. Avoid transporting chemicals in a passenger vehicle. Never leave chemicals unattended or stored in a vehicle.

AKKP CHECKLIST

6.0	KESELAMATAN BAHAN KIMIA BERBAHAYA				
Bil.	Perkara				
6.1	Daftar Bahan Kimia Berbahaya	Daftar bahan Kimia berbahaya mengikut format JKKP, dikemaskini	Sebahagian Daftar Bahan Kimia dibuat ATAU tidak mengikut format JKKP	Tiada Daftar Bahan Kimia dilaksanakan	
6.2	Pelabelan dan Pelabelan Semula	Pelabelan dan pelabelan semula dibuat mengikut garis panduan yang ditetapkan (USECHH 2000)	Pelabelan dan pelabelan semula dibuat tetapi tidak mengikut garis panduan	Tiada label dan pelabelan semula	
6.3	Penaksiran Risiko • CHRA	Ada dilaksanakan di tempat kerja dan didokumentasi	Ada dilaksanakan tetapi tidak didokumentasikan	Tiada atau belum membuat penaksiran	
6.4	Kawalan Kejuruteraan • *Eyewash / shower* • *Kebuk wasap*	Kebuk wasap/LEV berfungsi baik berserta rekod pemeriksaan tahunan	Tidak berfungsi dengan baik / tiada rekod penyelenggaran	Tiada kawalan	
6.5	Peralatan Perlindungan Diri (PPE) dan Peralatan Kecemasan	Ada program PPE. Disediakan dan diselenggara / tempat penyimpanan yang bersesuaian	Disediakan tetapi tidak diselenggara dengan baik	Tidak disediakan	
6.6	Maklumat, Arahan dan Latihan • *Chemical handling* • *Chemical spilled*	Mempunyai program maklumat, arahan dan latihan atau SOP. *Spilled kit* disediakan	Mempunyai program maklumat, arahan dan latihan atau SOP tetapi tidak dipratikkan	Tiada program maklumat, arahan dan latihan atau SOP	
6.7	Helaian Data Keselamatan (*SDS*) Bahan Kimi Berbahaya	Semua bahan yang digunakan mempunyai SDS, disimpan dengan kemas, mudah dicapai dan dikemaskini	TIDAK mudah dicapai, kemaskini. Sebahagian sahaja bahan kimia punyai SDS	Tiada helaian data keselamatan	
6.8	Papan Tanda Keselamatan	Keseluruhan tanda keselamatan dipamerkan menurut kehendak perundangan	Sebahagian sahaja dipamerkan	Tiada tanda keselamatan dipamerkan	
6.9	Penyimpanan Bahan Kimia Berbahaya	Melaksanakan amalan penyimpanan yang selamat	Sebahagian sahaja dilaksanakan	Tidak melaksanakan amalan penyimpanan yang selamat	
6.10	Pelupusan Sisa Terjadual	Melaksanakan amalan pelupusan selamat	Sebahagian sahaja dilaksanakan	Tidak melaksanakan amalan pelupusan selamat	
JUMLAH MARKAH 6.0					


SAFETY
FIRST
SAFETY IS
EVERYBODY'S
JOB

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