UNIVERSITI MALAYSIA PAHANG
AL-SULTAN ABDULLAH

OPERATIONAL CONTROL PROCEDURE

SCHEDULED WASTE MANAGEMENT

REVISION HISTORY

REV	DESCRIPTION	PREPARED BY	DATE
A	NEW RELEASE	OSHMO	08 NOV 2021

1.0 PURPOSE (S)

1.1 The procedure is developed as a guideline for safe and proper management of scheduled waste in UMPSA.

2.0 SCOPE

2.1 This procedure applies to all personnel involved in handling and managing scheduled waste in UMPSA.

3.0 REFERENCE

3.0 Environmental Quality (Scheduled Wastes) Regulations 2005

3.1 Environmental Quality (Amendment) Act 2012

3.2 Guidelines For Packaging, Labelling and Storage Of Scheduled Wastes In Malaysia 2014, Department of Environment

4.0 DEFINITION

No.	Term	Description
4.1	PIC	Person in charge to manage and handle scheduled waste at PTJ/RP
4.2	JKPBKBT	Chemical and Scheduled Waste Management Committee
4.3	OSHMO	Occupational Safety and Health Management Unit
4.4	PTJ	Responsibility Centre
4.5	RP	Student's Residence
4.6	UMPSA	Universiti Malaysia Pahang Al-Sultan Abdullah
4.7	DOE	Department of Environment, Malaysia
4.8	SW	Scheduled Waste
4.9	Regulation	Environmental Quality (Scheduled Wastes) Regulations 2005

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5.0 RESPONSIBILITY AND AUTHORITY

No.	Person In Charge	Responsibility and Authority
5.1	Staffs, students and contractors	✓ To comply with this procedure.
5.2	PTJ/RP	✓ To ensure implementation and enforcement of this procedure. ✓ To appoint PIC to manage SW at PTJ/RP. ✓ To provide adequate personnel and resources to ensure proper implementation of this procedure. ✓ To carry out inspection/audit to determine PTJ/RP's compliance to this procedure ✓ To provide waste generator with adequate information and training regarding to SW handling.
5.3	PIC	✓ To monitor compliance of this procedure at PTJ/RP. ✓ To advise PTJ/RP regarding to SW management. ✓ To coordinate SW disposal at PTJ/RP.
5.4	JKPBKBT	✓ To coordinate and facilitate SW management in UMPSA. ✓ To monitor compliance of this procedure.

6.0 INTERPRETATION

5.1 SW can be defined as any waste falling within the categories of waste listed in the First Schedule of the Regulation. Refer **Appendix A**.

5.2 Incompatible SW can be defined as SW specified in the Fourth Schedule of the Regulation which, when mixed, will produce hazardous situations through heat generation, fires, explosions or the release of toxic substances.

5.3 Contractor can be defined as any person licensed by the Director General of Environment Quality under subsection18(1A) of Environmental Quality Act 1974.

5.4 Waste generator is defined as any person who generates SW.

5.5 Waste handler is defined as personnel who involve in the identification, handling, labelling, transportation, storage or emergency response team on the spillage or leakage of SW.

6.0 IDENTIFICATION, CLASSIFICATION AND NOTIFICATION

6.1 Identification is a process to determine whether the waste generated is considered as SW or not. This can be identified through information on its chemical composition, properties or the source of the waste. Generally, the wastes generated from a process may exhibit some similar hazardous characteristics of the raw materials or chemicals or substances used.The waste which meet certain criteria such as the one that exhibit hazardous properties & characteristic can be classified as SW. It can be tested for ignitability, corrosivity, reactivity and toxicity. Analysis of hazardous composition or constituents can be done to confirm it.

6.2 Once it is determined as SW, classification process is carried out to classify its class and waste code based on the First Schedule of the Regulation.

6.3 PIC should identify the code of SW generated in their PTJ/RP according to the list in the First Schedule of the Regulation. PIC should inform JKPBKBT the list of code of SW generated in his PTJ/RP within 10 days from the date of generation of the SW .

6.4 JKPBKBT will notify DOE the new SW code and quantity, within 30 days from the date of generation of SW.

7.0 HANDLING

7.1 SW should be handled similar to other chemicals. Every relevant safety precaution must be made to ensure safe handling of SW. Refer **Appendix F**.

7.2 All personnel involved in the identification, handling, labelling, transportation, storage and emergency response team on the spillage or leakage of SW should be trained on the proper management of SW.

7.3 Appropriate PPE should be used when handling SW. Inspect it carefully before each use to make sure it is safe to be used.

7.4 Production of SW should be minimised as low as possible in line with reduction of SW campaign.

7.5 Filling of wastes into containers should be done as nearest as possible to the point of waste generation.

7.6 Waste generator need to ensure that only ¾ of the SW container is filled with SW. Those container should be sent for disposal after it is ¾ full.

7.7 The waste generator should provide Seventh Schedule (Waste Card) for each type of SW and all relevant parties should be made aware of it.

7.8 SW must never be disposed of onto the earth or by evaporation in a fume hood. Fume hoods are there as a safety equipment, not a disposal chamber.

7.9 Inspection of the stored SW shall be carried out on monthly basis to avoid any mishap. The record must be kept for reference. Upon inspection, immediate action shall be taken if any problem is detected.

7.10 Reactive wastes should be kept away from any moisture.

8.0 PACKAGING AND LABELING

8.1 SW shall be stored in containers which are compatible with the SW to be stored, durable and which are able to prevent spillage or leakage of the SW into the environment. Refer **Appendix E** for containers recommended to store SW.

8.2 Incompatible SW shall be stored in separate containers, and such containers shall be placed in separate secondary containment areas. This is to prevent any reaction which will deteriorate the container. Refer **Appendix D** for table of SW of potential incompatibility.

8.3 Secondary containment area is a liquid-tight barrier that will contain hazardous materials that are released from a container.

8.4 The container used should be in good condition and free from any damage such as tear or hole. Pallet used to store and transport SW container must also be in good condition. Periodic inspection must be conducted to ensure integrity of this material.

8.5 Storage material made from plastic is chosen to store certain SW since they are inert and made of corrosion-free material.

8.6 PIC can purchase SW containers themselves or obtain it from JKPBKBT.

8.7 To ensure its reliability, all containers are stored upright to prevent any spillage and ease of transfer. For storage purposes, drum is stored on top of pallet to ease the transfer process during disposal.

8.8 For identification and warning purposes, containers of SW shall be clearly labelled in accordance with the Third Schedule of the Regulation and marked with the SW code as specified in the First Schedule of the Regulation. Refer **Appendix B**.

8.9 The label shall be a square set at an angle of 45 degrees and the dimension shall not be less that 10 cm by 10 cm except where the size of the container or package warrants for a label of smaller size.

8.10 The date when the SW are first generated, name, address and telephone number of the waste generator shall be clearly labelled on the containers that are used to store the SW. Refer **Appendix C**.

8.11 Label should be placed on a background of contrasting colour.

8.12 In the case of waste capable of causing two or more hazards, all the hazards must be clearly identified and the waste shall be labelled accordingly.

8.13 No person is allowed to alter the markings and labels mentioned.

9.0 STORAGE

9.1 Storage means the holding of SW for a temporary period prior to the waste being transported, treated and disposed. PTJ/RP should store their SW in their own storage area, if available. If the storage area is almost full, PIC should inform JKPBKBT for further action.

9.2 Containers containing SW shall always be closed during storage except when it is necessary to add or remove the SW.

9.3 Area for the storage of the SW containers shall be designed, constructed and maintained adequately in accordance with the guidelines prescribed by the government to prevent spillage or leakage of SW into the environment.

9.4 A storage designated area in the waste generator's PTJ/RP shall be located away from the main activity area and area of human activities. Storage area should be located away from sources of heat or fire.

9.5 The storage area should be designed to provide adequate space to store all SW generated by the PTJ/RP. The storage area should be designed to provide 25% extra storage capacity of the actual maximum amount of waste generated and storage duration for not more than 180 days.

9.6 The entire storage area must be fenced-in and regarded as restricted area. Adequate signage should be put up clearly and visible with the word "DANGER" and "SCHEDULED WASTES STORAGE". Other information must also be posted outside the store for communication purpose, for example unauthorized personnel should keep out, PPE signage, Risk Assessment of the activity conducted, hazard of the SW, person in charge's name and phone number and many more.

9.7 Empty SW container should be stored separately from containers containing SW to prevent confusion.

9.8 Storage area should have adequate ventilation to prevent accumulation of hazardous gas.

9.9 The floor of the storage area and loading and unloading area must be covered with concrete or any suitable lining material, free of cracks and gaps to contain any spillage.

9.10 The storage area should be sheltered or roofed or covered with suitable covering material. The storage area should be properly managed to prevent rain water or surface water from entering the storage area. Any surface water run-off should be channelled to a proper drainage system to avoid the water from entering the storage area.

9.11 The entire storage area should be surrounded by a concrete dike or other equivalent structure designed to contain any spillage of the waste under the worst case scenario. The capacity of the containment should be 110% of the largest container stored in the storage area. There should not be any opening in the dike to prevent any leakage of waste from the storage area. The dike area should be graded to a sump.

9.12 Separate compartments should be provided for different groups of incompatible wastes. Since the waste generated from a process may exhibit some similar hazardous characteristics of the raw materials or chemicals or substances used, the Compatibility Chart for Chemical Mixtures can be used to indicate the hazards that can arise from mixing of incompatible chemical wastes.

9.13 Containers should be stored with an ample aisle space between groups of containers to allow for free movement of the forklift and other equipment and machinery, emergency fire fighting purpose, emergency escape route and ease of inspection of containers for leaks or spillages.

9.14 The SW should be moved using either forklift, pallet jack or portable drum jack. Manual handling of SW container is limited to a few activities only. Containers should not be pushed, rolled or dragged. This is to ensure safe handling of SW container while preventing ergonomic problems.

9.15 Smoking should be prohibited in SW storage area and non-smoking signage should be put up at the storage area.

10.0 INVENTORY

10.1 Regulation 11 clearly highlight that SW generator should keep accurate and up-to-date inventory of the SW generated in accordance with the Fifth Schedule of the Regulation. The record should be kept for three years starting from the date the SW was generated. By keeping the inventory, it will prevent the stored SW form exceeding 180 days' time limit imposed on the storage of SW. It will also prevent the amount of SW stored from exceeding 20 metric tonnes.

10.2 Inventory record for each SW should be maintained to indicate the date, type and quantity of SW brought into or removed from the storage site.

10.3 PIC should conduct an inventory checking of the SW generated monthly. This data should be communicated to JKPBKBT for the purpose of updating the inventory to DOE. The data should be comunicated to JKPBKBT before 28th of every month.

11.0 DISPOSAL

11.1 Disposal will be coordinated for all PTJ/RP once every six (6) months or if the entire storage exceeds 20 metric tons, whichever come first.

11.2 JKPBKBT will appoint contractor who is registered with DOE to carry out the disposal work at UMP's premises.

11.3 Consignment note based on Sixth Schedule of the Regulation for disposal will be prepared by JKPBKBT based on monthly inventory provided by PIC. Consignment note must be prepared before contractor collect the SW for disposal.

11.4 Containers to be transported for disposal shall be fastened securely on a good conditioned pallet. The drums shall be secured with appropriate plastic wrapping or other suitable method.

12.0 EMERGENCY PREPAREDNESS

12.1 Emergency procedures relevant to SW handling should be established, documented and made available to relevant personnel. A copy of the emergency procedures should also be made available at the storage area.

12.2 For emergency response purposes, emergency shower and eyewash, first aid kit, fire extinguisher, spill kit and other relevant emergency equipment must be made available nearby storage area. The storage area must also comply fully with the requirements of the Fire and Rescue Department of Malaysia.

12.3 Waste generator must provide technical expertise to assist in the clean-up operation in case of any spillage.

13.0 E-WASTE

13.1 E-waste is a broken, non-working or old/obsolete electric electronic appliance such as TV, PC, air conditioner, washing machine and refrigerator. Other example is printed circuit board which contain heavy metal such as nickel, chromium and plumbum.

13.2 DOE has published a "Guidelines for the Classification of Used Electrical & Electronic Equipment in Malaysia" as reference.

13.3 This waste should not be disposed as domestic waste. This is because electric and electronic components are toxic and non-biodegradable. The component can be reused as resources for new component.

14.0 BIOLOGICAL WASTE

14.1 Biological wastes can be defined as any materials that are contaminated with recombinant or synthetic nucleic acids, agents infectious to humans, animals or plants, or fluids that may contain these contaminants. This waste must be managed as SW

because it may cause potential risk to the health of humans, animals, plants or the environment.

14.2 Examples of biological wastes are:

14.2.1 Any materials contaminated with microorganisms.

14.2.2 Any genetically modified organisms/microorganism, animal cell cultures and unwanted organisms/microorganism.

14.3 Biological waste can be generally divided into three categories. Waste generator must segregate the waste based on these categories.

14.3.1 Sharps Waste

Sharps waste include any materials contaminated with biological material which are sharp enough that it could break or puncture the skin, for example needles, scalpels, razor blades, glass slides and broken glass. After it has been used, these materials should not be recapped or clipped. Instead, it should be disposed into puncture-and-leak- proof sharp waste bin immediately. This waste must always be transported in its sharp waste bin.

14.3.2 Solid Biological Waste

Solids biological wastes can be categorized as lab consumables that have come in contact with biological materials and any material that can be considered as infectious. Example of the wastes are petri dishes, plastic culture vessels and solidified agar. These wastes must be placed in autoclavable plastic bag and autoclaved prior to disposal. Solid biological wastes that have been autoclaved must be secured using cable tie and affixed with proper label. Then, it should be placed in the designated location and stored at 4^0C while waiting for disposal. Biohazard-labelled, yellow-coloured plastic bag must be used to store the waste awaiting disposal.

14.3.3 Liquid Biological Waste

Liquid biological wastes are liquids containing organism or microorganism. These wastes shall only be disposed into the drain after it has been decontaminated using autoclave.

14.4 The most effective and reliable methods of sterilising laboratory materials and decontaminating biohazard wastes is by using autoclave. On site decontamination by using autoclave can be used for biological wastes, excluding sharps waste and animal carcasses.

14.5 Biological wastes must not be stored with other SW unless those waste is properly separated by barriers.

15.0 eSWIS

15.1 Electronic Scheduled Waste Information Systems (eSWIS) is an online system for waste generator to provide information regarding to their SW to DOE.

15.2 Waste generator will be able to notify DOE, update their inventory and generate consignment note using this online system.

16.0 APPENDIX

16.1 First Schedule of the Regulation (SW Code)

16.2 Third Schedule of the Regulation (Labelling Requirement for SW)

16.3 Example of SW Label

16.4 Third Schedule of the Regulation (SW of Potential Incompatibility)

16.5 Container for SW

16.6 Flowchart of SW Disposal

16.7 Flowchart of Biological Waste Disposal

16.8 Checklist for Monthly SW Store's Inspection

APPENDIX A

FIRST SCHEDULE

(Regulation 2)

SW 1 Metal and metal-bearing wastes

SW 101 Waste containing arsenic or its compound

SW 102 Waste of lead acid batteries in whole or crushed form

SW 103 Waste of batteries containing cadmium and nickel or mercury or lithium

SW 104 Dust, slag, dross or ash containing arsenic, mercury, lead, cadmium, chromium, nickel, copper, vanadium, beryllium, antimony, tellurium, thallium or selenium excluding slag from iron and steel factory

SW 105 Galvanic sludges

SW 106 Residues from recovery of acid pickling liquor

SW 107 Slags from copper processing for further processing or refining containing arsenic, lead or cadmium

SW 108 Leaching residues from zinc processing in dust and sludges form

SW 109 Waste containing mercury or its compound

SW 110 Waste from electrical and electronic assemblies containing components such as accumulators, mercury-switches, glass from cathode-ray tubes and other activated glass polychlorinated biphenyl-capacitors, or contaminated with cadmium, mercury, lead, nickel, chromium, copper, lithium, silver, manganese or polychlorinated biphenyl

SW 2 Wastes containing principally inorganic constituents which may contain metals and organic materials

SW 201 Asbestos wastes in sludges, dust or fibre forms

SW 202 Waste catalysts

SW 203 Immobilized scheduled wastes including chemically fixed, encapsulated, solidified or stabilized sludges

SW 204 Sludges containing one or several metals including chromium, copper, nickel, zinc, lead, cadmium, aluminium, tin, vanadium and beryllium

SW 205 Waste gypsum arising from chemical industry or power plant

SW 206 Spent inorganic acids

SW 207 Sludges containing fluoride

SW 3 Wastes containing principally organic constituents which may contain metals and inorganic materials

SW 301 Spent organic acids with pH less or equal to 2 which are corrosive or hazardous

SW 302 Flux waste containing mixture of organic acids, solvents or compounds of ammonium chloride

SW 303 Adhesive or glue waste containing organic solvents excluding solid polymeric materials

SW 304 Press cake from pretreatment of glycerol soap lye

SW 305 Spent lubricating oil

SW 306 Spent hydraulic oil

SW 307 Spent mineral oil-water emulsion

SW 308 Oil tanker sludges

SW 309 Oil-water mixture such as ballast water

SW 310 Sludge from mineral oil storage tank

SW 311 Waste oil or oily sludge

SW 312 Oily residue from automotive workshop, service station oil or grease interceptor

SW 313 Oil contaminated earth from re-refining of used lubricating oil

SW 314 Oil or sludge from oil refinery plant maintenance operation

SW 315 Tar or tarry residues from oil refinery or petrochemical plant

SW 316 Acid sludge

SW 317 Spent organometallic compounds including tetraethyl lead, tetramethyl lead and organotin compounds

SW 318 Waste, substances and articles containing or contaminated with polychlorinated biphenyls (PCB) or polychlorinated triphenyls (PCT)

SW 319 Waste of phenols or phenol compounds including chlorophenol in the form of liquids or sludges

SW 320 Waste containing formaldehyde

SW 321 Rubber or latex wastes or sludge containing organic solvents or heavy metals

SW 322 Waste of non-halogenated organic solvents

SW 323 Waste of halogenated organic solvents

SW 324 Waste of halogenated or unhalogenated non-aqueous distillation residues arising from organic solvents recovery process

SW 325 Uncured resin waste containing organic solvents or heavy metals including epoxy resin and phenolic resin

SW 326 Waste of organic phosphorus compound

SW 327 Waste of thermal fluids (heat transfer) such as ethylene glycol

SW 4 Wastes which may contain either inorganic or organic constituents

SW 401 Spent alkalis containing heavy metals

SW 402 Spent alkalis with pH more or equal to 11.5 which are corrosive or hazardous

SW 403 Discarded drugs containing psychotropic substances or containing substances that are toxic, harmful, carcinogenic, mutagenic or teratogenic

SW 404 Pathogenic wastes, clinical wastes or quarantined materials

SW 405 Waste arising from the preparation and production of pharmaceutical product

SW 406 Clinker, slag and ashes from scheduled wastes incinerator

SW 407 Waste containing dioxins or furans

SW 408 Contaminated soil, debris or matter resulting from cleaning-up of a spill of chemical, mineral oil or scheduled wastes

SW 409 Disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled wastes

SW 410 Rags, plastics, papers or filters contaminated with scheduled wastes

SW 411 Spent activated carbon excluding carbon from the treatment of potable water and processes of the food industry and vitamin production

SW 412 Sludges containing cyanide

SW 413 Spent salt containing cyanide

SW 414 Spent aqueous alkaline solution containing cyanide

SW 415 Spent quenching oils containing cyanides

SW 416 Sludges of inks, paints, pigments, lacquer, dye or varnish

SW 417 Waste of inks, paints, pigments, lacquer, dye or varnish

SW 418 Discarded or off-specification inks, paints, pigments, lacquer, dye or varnish products containing organic solvent

SW 419 Spent di-isocyanates and residues of isocyanate compounds excluding solid polymeric material from foam manufacturing process

SW 420 Leachate from scheduled waste landfill

SW 421 A mixture of scheduled wastes

SW 422 A mixture of scheduled and non-scheduled wastes

SW 423 Spent processing solution, discarded photographic chemicals or discarded photographic wastes

SW 424 Spent oxidizing agent

SW 425 Wastes from the production, formulation, trade or use of pesticides, herbicides or biocides

SW 426 Off-specification products from the production, formulation, trade or use of pesticides, herbicides or biocides

SW 427 Mineral sludges including calcium hydroxide sludges, phosphating sludges, calcium sulphite sludges and carbonates sludges

SW 428 Wastes from wood preserving operation using inorganic salts containing copper, chromium or arsenic of fluoride compounds or using compound containing chlorinated phenol or creosote

SW 429 Chemicals that are discarded or off-specification

SW 430 Obsolete laboratory chemicals

SW 431 Waste from manufacturing or processing or use of explosives

SW 432 Waste containing, consisting of or contaminated with, peroxides

SW 5 Other wastes

SW 501 Any residues from treatment or recovery of scheduled wastes

APPENDIX B

THIRD SCHEDULE

LABELLING REQUIREMENT FOR SCHEDULED WASTES

EXPLOSIVE SUBSTANCES
(WASTE)
Symbol (exploding bomb): black; Background: light orange
Label 1

INFLAMMABLE LIQUIDS
(WASTE)
Symbol (flame): black or white; Background: red
Label 2

INFLAMMABLE SOLIDS
(WASTE)
Symbol (flame): black; Background: white with vertical red stripes
Label 3

SOLID: SPONTANEOUSLY COMBUSTIBLE
(WASTE)
Substance liable to spontaneous combustion
Symbol (flame): black;
Background: upper half white, lower half red
Label 4

SOLID: DANGEROUS WHEN WET
(WASTE)
Substances which, if in contact with water, emit inflammable gases
Symbol (flame): black or white; Background: blue
Label 5

OXIDIZING SUBSTANCES
(WASTE)
Symbol (flame over circle): black; Background: yellow
Label 6

ORGANIC PEROXIDES
(WASTE)
Symbol (flame over circle): black; Background: yellow
Label 7

TOXIC SUBSTANCES
(WASTE)
Poisonous (toxic) substances
Symbol (skull over crossbones): black; Background: white
Label 8

INFECTIOUS SUBSTANCES
(WASTE)
Symbol (three crescents superimposed on a circle): black;
Background: white
Label 9

CORROSIVE SUBSTANCES
(WASTE)
Symbol (liquids spilling from two glass vessels and attacking a hand and a metal): black;
Background: upper half white, lower half black
Label 10

MIXTURE OF MISCELLANEOUS DANGEROUS SUBSTANCES
(WASTE)
Symbol (nil); Background: white with upper half vertical black stripes
Label 11

APPENDIX C

MIXTURE OF MISCELLANEOUS DANGEROUS SUBSTANCES
(WASTE)

Waste code	:
Waste name	:
Date generated	:
Name of waste generator	:
Address and telephone number	:

APPENDIX D

FOURTH SCHEDULE

(Regulation 2)

SCHEDULED WASTES OF POTENTIAL INCOMPATIBILITY

The mixing of a waste in Group A with a waste in Group B may have the following potential consequences:

Group 1-A	*Group 1-B*
Alkaline caustic liquids	Acid sludge
Alkaline cleaner	Chemical cleaners
Alkaline corrosive liquid	Electrolyte, acid
Caustic wastewater	Etching acid, liquid or solvent
Lime sludge and other corrosive alkalies	Pickling liquor and other corrosive acid
	Spent acid
	Spent mixed acid

Potential consequences: Heat generation, violent reaction.

Group 2-A	*Group 2-B*
Asbestos	Solvents
Beryllium	Explosives
Unrinsed pesticide containers	Petroleum
Pesticides	Oil and other flammable wastes

Potential consequences: Release of toxic substances in case of fire or explosion.

Group 3-A	*Group 3-B*
Aluminium	Any waste in Group 1-A or 1-B
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder and other reactive metals and metal hydrides	

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 4-A	*Group 4-B*
Alcohols	Any concentrated waste in Group 1-A or 1-B
	Calcium
	Lithium
	Metal hydrides
	Potassium
	Sodium
	Water reactive wastes

Potential consequences: Fire, explosion or heat generation; generation of flammable toxic gases.

Group 5-A	*Group 5-B*
Alcohols	Concentrated Group 1-A or 1-B wastes
Aldehydes	
Halogenated hydrocarbons	Group 3-A wastes
Nitrated hydrocarbons and other reactive organic compounds and	

solvents

Unsaturated hydrocarbons

Potential consequences: Fire, explosion or violent reaction.

Group 6-A	*Group 6-B*
Spent cyanide and sulphide solution	Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulphide gas.

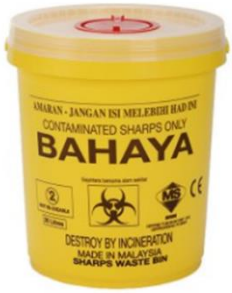
Group 7-A	*Group 7-B*
Chlorates and other strong oxidizers	Organic acids

Group 7-A	*Group 7-B*
Chlorites	Group 2-B wastes
Chromic acid	Group 3-B wastes
Hypochlorites	Group 5-A wastes and other
Nitrates	flammable and combustible wastes
Nitric acid	
Perchlorates	
Permanganates	
Peroxides	

Potential consequences: Fire, explosion or violent reaction.

APPENDIX E

TYPE OF CONTAINER	TYPE OF SW	REQUIREMENT
Bunghole Drum (Plastic/Steel)  	• Inorganic or organic liquid waste • Steel drums should not be used for corrosive wastes such as acids or alkalis • Plastic drums compatible with most solvents. Solvents that are not compatible with plastic such as Diethyl Ether and Chloroform should be stored in steel drums	No hole, no bulge, and free of dent and corrosion
Open top drum with cover and clamp (Plastic/Steel)  	• Solid waste • Steel drums should not be used for acidic or alkaline waste • Example: sludge, e-waste, pharmaceutical waste, laboratory waste, contaminated gloves etc.	No hole, no bulge, and free of dent and corrosion

Intermediate bulk container 	Used for a broad range of waste streams such as oils, solvents and acids	No hole or crack
Jerrican / Carboy 	Inorganic or organic liquid waste such as chemical wastes, solvents, etc	No hole or crack
Sharp Waste Bin  	Clinical wastes / pathogenic wastes/sharp waste	No hole or crack

Corrugated box / carton box 	• Dry solid waste with no free-flow liquid generated in small quantity • Example: e-waste, contaminated rags, expired drugs, cosmetics, etc.	No tear or hole
Flexible Intermediate Bulk Containers (FIBCs)/ Jumbo Bags 	• Dry solid waste with no free-flow liquid • Example: dust, slag, ash, clinker, e-waste, dry sludge, contaminated rags / garnet, etc	• Preferably FIBCs made of high density poly ethylene (HDPE) • Must be doubled lining • Bags not to be filled more than 90% for secure packaging

APPENDIX F

SCHEDULED WASTE DISPOSAL

BY WHOM	PROCESS FLOW	INFORMATION
	Start	
Waste Generator	Dispose solid or liquid scheduled waste to scheduled waste container at Temporary Scheduled Waste Area	**Points To Remember:** 1. Do not handle scheduled waste unless you are equipped with proper Personal Protective Equipment. 2. Dispose your scheduled waste into appropriate container. 3. Hand tight the cap of container 4. Notify Lab Owner if the container is full 5. In case of scheduled waste spillage, please refer to Chemical & Waste Spillage Notification & Response procedure. 6.Scheduled waste container must be properly labelled. 7.Container with liquid scheduled waste must be no more than 80% full.
	Scheduled waste container is full	
Lab owner	Transfer scheduled waste container to Scheduled Waste Store & collect new scheduled waste container	
OSH Unit	Weigh monthly inventory of scheduled waste stored	
OSH Unit	Provide monthly scheduled waste inventory to Scheduled Waste Manager	
OSHMO	Arrange collection by licensed contractor	
OSHMO	Payment to licensed contractor	
	End	

BIOLOGICAL WASTE DISPOSAL

BY WHOM	PROCESS FLOW	INFORMATION
	Start	
Waste Generator	Autoclave the biological waste	**Points To Remember:** **1**. Do not handle biological waste unless you are equipped with proper Personal Protective Equipment. **2**. Get proper training on how to operate autoclave before operating it. **3**. Use proper autoclave bag for autoclaving purpose. **4**. Seal autoclave bag properly before autoclaving it. 5. In case of biological waste spillage, please refer to Chemical & Waste Spillage Notification & Response procedure. 6.Biological waste bag must be properly labelled.
Waste Generator	Transfer biological waste to Temporary Waste Area	
Lab owner	Transfer biological waste to freezer in Scheduled Waste Store	
OSH Unit	Weigh monthly inventory of biological waste stored	
OSH Unit	Provide monthly biological waste inventory to Scheduled Waste Manager	
OSHMO	Arrange collection by licensed contractor	
OSHMO	Payment to licensed contractor	
	End	

	SENARAI SEMAK BULANAN STOR BUANGAN TERJADUAL (SW)	PTj : TARIKH:

No	Keterangan	(√/X)	Komen	Penambahbaikan
	STOR			
1	Kawasan stor bersih & kemas			
2	Tiada rekahan di lantai yang boleh menyebabkan cecair meresap.			
3	SW tidak disimpan melebihi 180 hari			
4	Berat SW tidak melebihi 20 metrik tan			
5	SW yang tidak serasi distor secara berasingan			
6	SW tidak terdedah terus kepada cahaya matahari			
7	Bekas SW tidak diletakkan di atas bekas lain			
8	Ruang yang mencukupi diantara bekas SW untuk laluan pekerja			
9	Stor bebas daripada air atau cecair lain.			
	BEKAS SW			
1	Tiada bekas SW yang bocor			
2	Tiada keadaan tidak normal pada bekas SW			
3	Penutup bekas SW ditutup			
4	Bekas SW dilabel dengan baik			
	KESIAPSIAGAAN			
1	Peralatan melawan kebakaran berada dalam keadaan yang baik			
2	PPE mencukupi			
3	Stok label SW mencukupi			

Diperiksa oleh	
Komen Keseluruhan	