

RECOMMENDED GUIDELINES ON RISK-BASED PRIORITIZATION OF EXISTING CHEMICALS IN THE PHILIPPINES

a. Introduction:

Prioritization is the initial step in the process of evaluating existing chemicals. The purpose of prioritization is to designate a chemical substance to *potentially* pose unreasonable risk to public health, workplace, and the environment. This is practiced by other countries including USA. It is used to identify potential candidate chemicals in PICCS for further review and assessment under the RA 6969 Toxic Substance and Hazardous and Nuclear Waste Control Act.

Prioritization schemes are based on available data. These data are collected from an array of different sources to inform the prioritization decisions. Hazards to Human and Environment data should be reported and collected from publicly available information sources, including peer reviewed scientific literature, and chemical databases such as the ECHA/REACH dissemination database and the GHS Classifications and Labeling of Products. Many organizations also use internal reports and data which in some cases are confidential and not available to the public, such as data submitted directly by industry (gray literature).

High-priority chemical, as defined in TSCA is “a chemical substance that the Administrator concludes, without consideration of costs or other non-risk factors, may present an unreasonable risk of injury to health or the environment because of a potential hazard and a potential route of exposure under the conditions of use, including an unreasonable risk to potentially exposed or susceptible subpopulations identified as relevant by the Administrator”. A low-priority substance is one that “if the Administrator concludes, based on information sufficient to establish, without consideration of costs or other non-risk factors, that such substance does not meet the [High-Priority] standard” A chemical designated as low-priority indicates a risk evaluation is not warranted at that time, but this is not a finding of low or no risk.

b. Scope of Prioritization:

1. Chemicals in the Philippine Inventory of Chemical and Chemical Substances (PICCS).
2. Chemicals that had been previously identified as PCL.
3. Chemicals included in the MEAs not yet included in the Chemical Control Order List.

c. Prioritization Model

The complete risk assessment framework project is as follows:

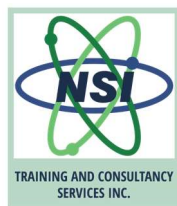
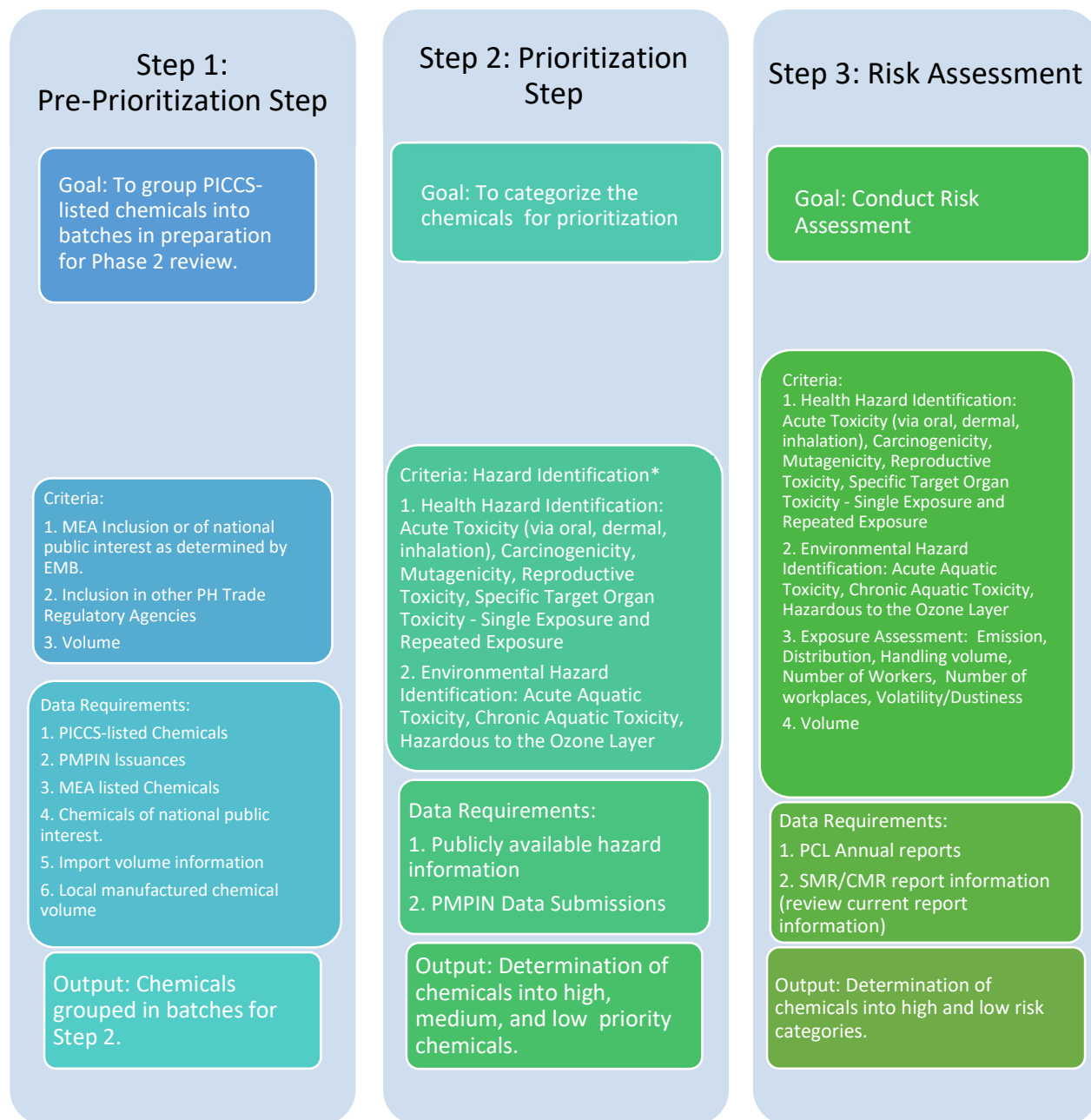
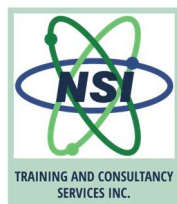


Figure 1. Framework of the Full Risk Assessment Project



****Hazard information should be based on GHS Version 8 standard***



Steps 1 and 2 are covered in this paper. The prioritization scheme to be used is based on a quantitative scoring system to identify health and environmental hazards of the chemicals using a scoring matrix; the final score is then used to determine the priority of the substance. The scheme has the goal of identifying high, medium, and low priority chemicals from among the chemicals listed in PICCS.

1. **Step 1:** Pre-prioritization or Sorting Step. This is recommended to help the EMB batch or bin the chemicals as listed in PICCS for hazard classification. The criteria include obligations to international treaties (MEA), volume, and regulation by other trade regulatory agencies.

Table 1. Step 1 Methodology / Work Plan*:

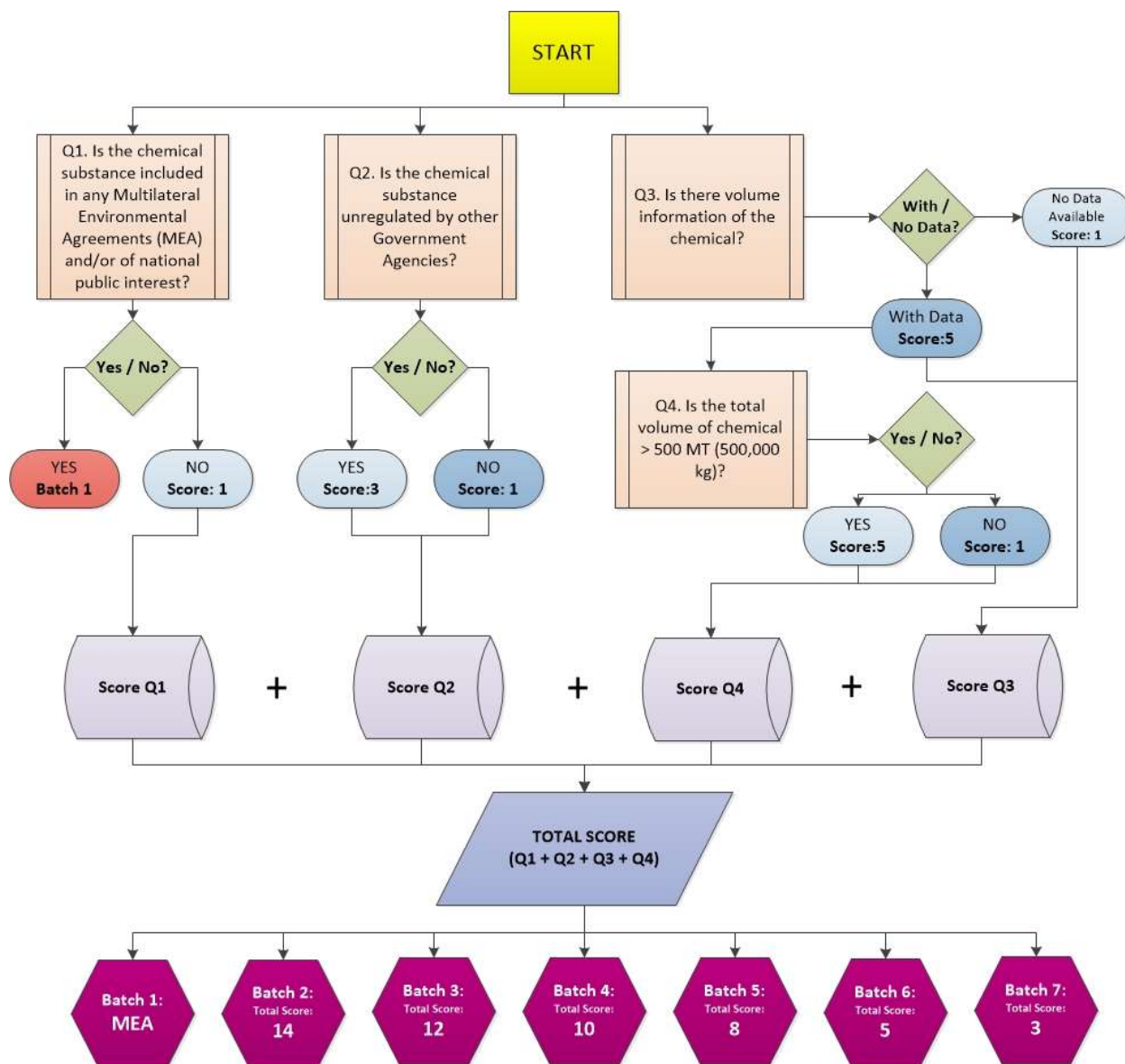
Steps	Activities
Step 1.1 : Identify the chemical	1. Identify the chemical name and CAS number
Step 1.2: Scoring	<ol style="list-style-type: none"> 1. Is the chemical substance included in any Multilateral Environmental Agreements (MEA) and/or of national public interest?** 2. Is the chemical substance unregulated by other Government Agencies? 3. Is there volume information of the chemical? 4. Is the total volume of chemical > 500 MT (500,000 kg)?***
Step 1.3: Grouping	Group chemicals based on scoring.

**Detailed information is to be presented in next Section*

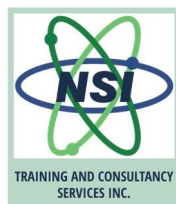
***As determined by EMB*

**** Annual importation, annual manufacturing, and/or annual consumption*

Figure 2. Flowchart of Pre-prioritization Tab



Step 1 is similar to the binning approach of the TSCA. This step will help to reduce the size of the pool from which the EMB will draw chemicals for potential prioritization, its



purpose is not to identify a list of high-priority candidates. Nor is its purpose to signal that the EMB has concerns with particular chemicals or categories of chemical substances. The starting point of the PICCS is at 22,277 chemicals. Through the pre-prioritization step, EMB will attempt to identify a portion of the PICCS that can be set aside as not containing candidates for high-priority designation, so that EMB can focus on chemicals that are most likely to meet the statutory standard of high priority chemicals.

2. Step 2: Prioritization Step. The purpose of prioritization is to designate a chemical substance to *potentially* pose unreasonable risk to public health, workplace, and the environment. The methodology for hazard scoring and ranking is based on human health and environmental endpoints. The primary basis is the United Nations (2019). Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Eighth revised edition. In order of precedence, data may be sourced according to primary information from Pre-Manufacture Pre-Importation Notification (PMPIN) evaluation reports, secondary information shared by other countries, and alternative information, e.g., Quantitative Structure-Activity Relationship (QSAR), read across models with analog structures, chemical grouping, etc.

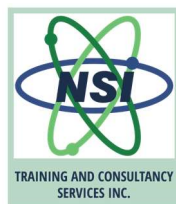
Table 2. Step 2 Methodology / Work Plan*:

Step 2.1: Identify the chemical	1. Identify the chemical name and CAS number
Step 2.2: Data Gathering	2. Collect relevant health and environmental hazards based on GHS.
Step 2.3: Scoring	Determine the score based on hazard levels corresponding scores (High - 3, Medium - 2, Low - 1, and Not Classified = 0)
Step 2.4: Validation	Prioritize Chemicals based on the score.

**Detailed information is to be presented in next Section.*

d. Frequency of Prioritization

The addition and removal of chemicals in the Prioritization List is recommended to be regularly reviewed **every five years**. High priority chemicals (HPC) may need additional requirements based on international regulations (i.e. MEA), use, and impact to both human health and environment. As such, HPCs may be added to the Chemical Control Order upon the assessment of the EMB. On the other hand, it can be expected that Low priority chemicals



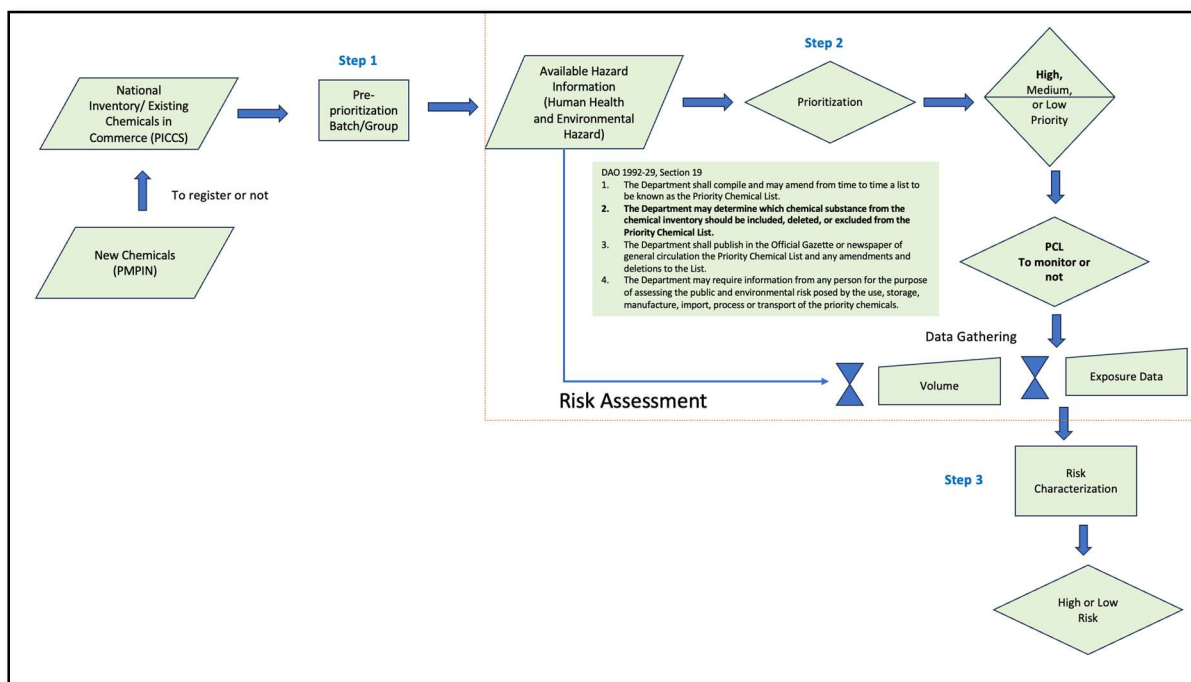
(LPC) may be removed from the Prioritization List once it has been assessed as low risk.

Ongoing prioritization allows for new information to be examined as it becomes available and appropriate action to be taken in a timely manner. It is an advantage to identify chemical regularly because it allows for new information to be added through a formal and structured process.

- e. **Out of Scope:** Chemical mixture is out of scope for this project. Companies will follow existing regulations as per DENR to obtain PCL certificate or exemption.

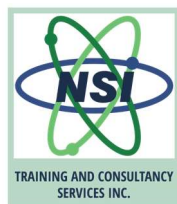
II. Main Features and Basis of the Toolkit:

Figure 3. Schematic diagram of Steps 1-3.



1. Step 1: Pre-Prioritization Step

There are currently 22,277 chemicals listed in the PICCS. Due to the limitation of the resources of the EMB, it is recommended to use a pre-prioritization step.



Generally, pre-prioritization is a schematic approach on how the chemicals already listed in the Inventory can be sorted for hazard assessment. To be able to review all PICCS-listed chemicals, a pre-prioritization step is recommended to group the chemicals into batches for hazard assessment. This will help the assessors to screen the currently listed chemicals in PICCS.

The following criteria are set for the pre-prioritization (pre-assessment) of the chemicals in PICCS:

- 1.1. MEA:** If the chemical is included in any Multilateral Environmental Agreement for control/regulation but not yet identified as CCO, the chemical will immediately be included in the first batch for hazard classification. Annex 1 provides the list of chemicals being regulated in the different Multilateral Environmental Agreements.
- 1.2. Focus:** Focus reflects the level of concern of the DENR for the chemical. If the chemical is already regulated by another agency, the chemical would have a lower score since the assumption is that the already-regulated chemicals are currently being monitored by the other agency(ies). Annex 2 provides the list of chemicals being monitored by other regulatory agencies – Philippine National Police (PNP) and Philippine Drug Enforcement Agency (PDEA). The next steps are to determine how chemical information can be shared among the regulatory agencies to avoid multiple regulations on the same chemical.
- 1.3. Volume:** This will only cover chemical substances.

Option 1: In 2016, DENR-EMB initiated a project on High Volume Chemicals (HVC). The main objective of which was to verify the chemicals that provide high exposure to the general public in terms of quantity in Philippine commerce. The list of chemicals included in the High Volume Chemicals are included in DENR-EMB-MC-2017-010. Inclusion of the chemical in this list means that the chemical substance has a volume of greater than 500,000kg (500MT). A “No” would give a higher priority to the chemical substance.

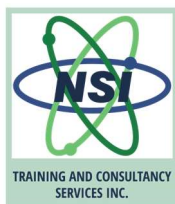
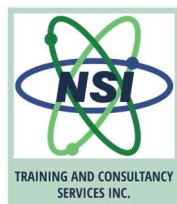


Table 3. Pre-prioritization Scoring of existing chemicals.

Pre Prioritization Scoring		
Criteria	Scores	
1. Is the chemical substance included in any Multilateral Environmental Agreements (MEA) and/or of national public interest?	YES	BATCH 1
	NO	1
2. Is the chemical substance unregulated by other Government Agencies?	YES	3
	NO	1
3. Is there volume information of the chemical?	With Data	5
	No Data Available	1
4. Is the total volume of chemical > 500 MT (500,000 kg)?	YES	5
	NO	1
Total Score	BATCH 1	MEA
	BATCH 2	TOTAL SCORE OF 14
	BATCH 3	TOTAL SCORE OF 12
	BATCH 4	TOTAL SCORE OF 10
	BATCH 5	TOTAL SCORE OF 8
	BATCH 6	TOTAL SCORE OF 5
	BATCH 7	TOTAL SCORE OF 3

Ergo, Batch 1 will be the first group of chemical substances to be reviewed for Step 2.



2. Step 2: Chemical Prioritization Criteria

The following criteria were selected for Prioritization based on the PCL policy objective to prevent unreasonable risk to public health, workplace, and the environment.

In toxicology the main objective is to determine whether adverse effects may occur as a result of chemical exposure. The IPCS (2004) defines adverse as 'Change in the morphology, physiology, growth, development, reproduction, or life span of an organism, system, or (sub)population that results in an impairment of functional capacity, an impairment of the capacity to compensate for additional stress, or an increase in susceptibility to other influences.

There are ten (10) health hazards under GHS. However, based on most of the criteria used by other countries, hazards that can cause systemic effects are used. Chemical exposure could result in local or systemic effects, or even both. Local effects are caused by exposure to chemicals such as skin irritants and corrosive chemicals; commonly through chemical splashes, etc. Systemic effects however relate to adverse effects occurring elsewhere in the body away from the original site of exposure and, unlike local effects, absorption of the chemical in question must take place for the possibility of systemic effects to occur. For example, exposure to sodium hydroxide will cause local effects, but not systemic effects. In contrast, exposure to benzene will cause systemic effects should inhalation exposure occur, but can also cause local, degreasing effects to the skin upon prolonged exposure by this route (Fisk, 2013).

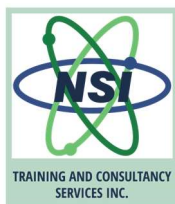
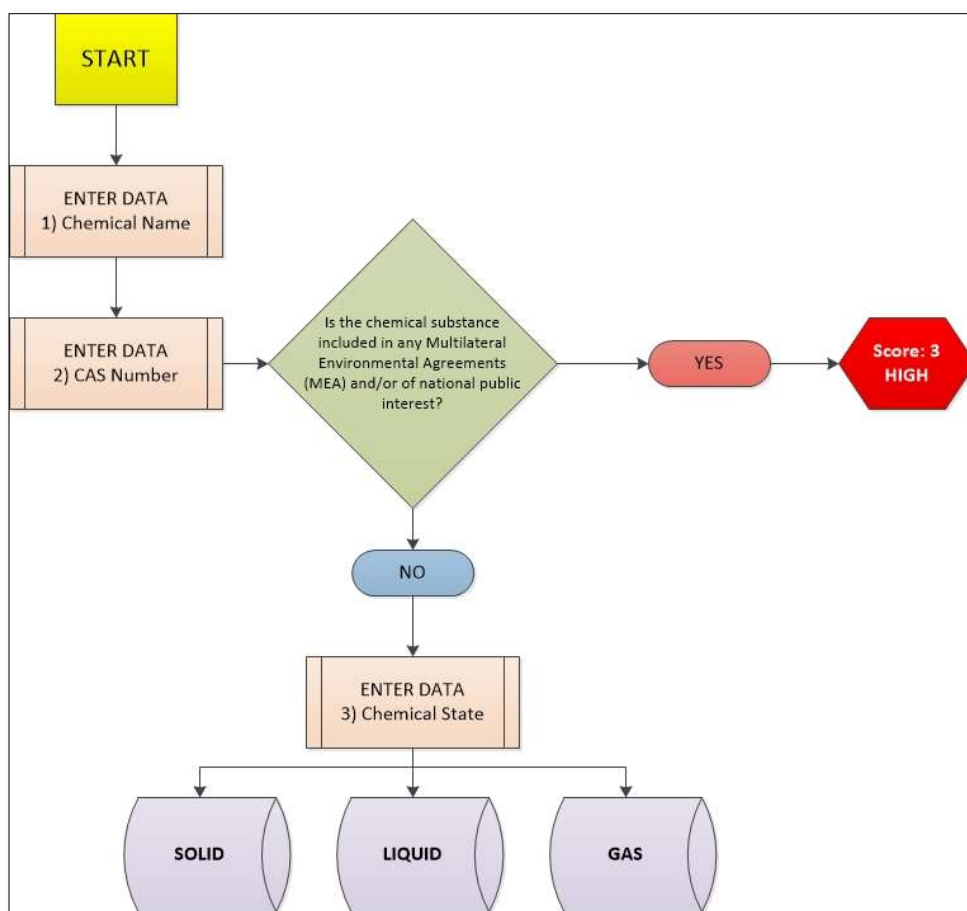
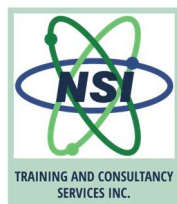


Figure 4. Overview of Hazard Identification



2.1 Toxicity Data – Health:

- a. Acute Toxicity – refers to serious adverse health effects (i.e., lethality) occurring after a single or short- term oral, dermal or inhalation exposure to a substance or mixture.



- b. Carcinogenicity – refers to the induction of cancer or an increase in the incidence of cancer occurring after exposure to a substance or mixture. Substances and mixtures which have induced benign and malignant tumors in well performed experimental studies on animals are considered also to be presumed or suspected human carcinogens unless there is strong evidence that the mechanism of tumor formation is not relevant for humans.
- c. Germ Cell Mutagenicity – refers to heritable gene mutations, including heritable structural and numerical chromosome aberrations in germ cells occurring after exposure to a substance or mixture.
- d. Reproductive Toxicity – refers to adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring, occurring after exposure to a substance or mixture.
- e. Specific Target Organ Toxicity (Single Exposure) – refers to specific, non-lethal toxic effects on target organs occurring after a single exposure to a substance or mixture.
- f. Specific Target Organ Toxicity (Repeated Exposure) – refers to specific toxic effects on target organs occurring after repeated exposure to a substance or mixture.

2.2 Toxicity Data – Environment:

- a. Acute Aquatic Toxicity – means the intrinsic property of a substance to be injurious to an organism in a short-term aquatic exposure to that substance.
- b. Chronic Aquatic Toxicity - means the intrinsic property of a substance to cause adverse effects to aquatic organisms during aquatic exposures which are determined in relation to the life-cycle of the organism. Persistence and degradability is the potential for the substance or the appropriate constituents of a mixture to degrade in the environment, either through biodegradation or other processes, such as oxidation or hydrolysis. Persistence and degradability are generally available for Chronic Aquatic Toxicity information.
- b. Hazardous to the Ozone Layer - Any of the controlled substances listed in Annexes to the Montreal Protocol; or

- a. Any mixture containing at least one ingredient listed in the Annexes to the Montreal Protocol, at a concentration $\geq 0.1\%$ Any of the controlled substances listed in Annexes to the Montreal Protocol; or
- b. Any mixture containing at least one ingredient listed in the Annexes to the Montreal Protocol, at a concentration $\geq 0.1\%$

Figure 5. Overview of Hazard Identification for Solid

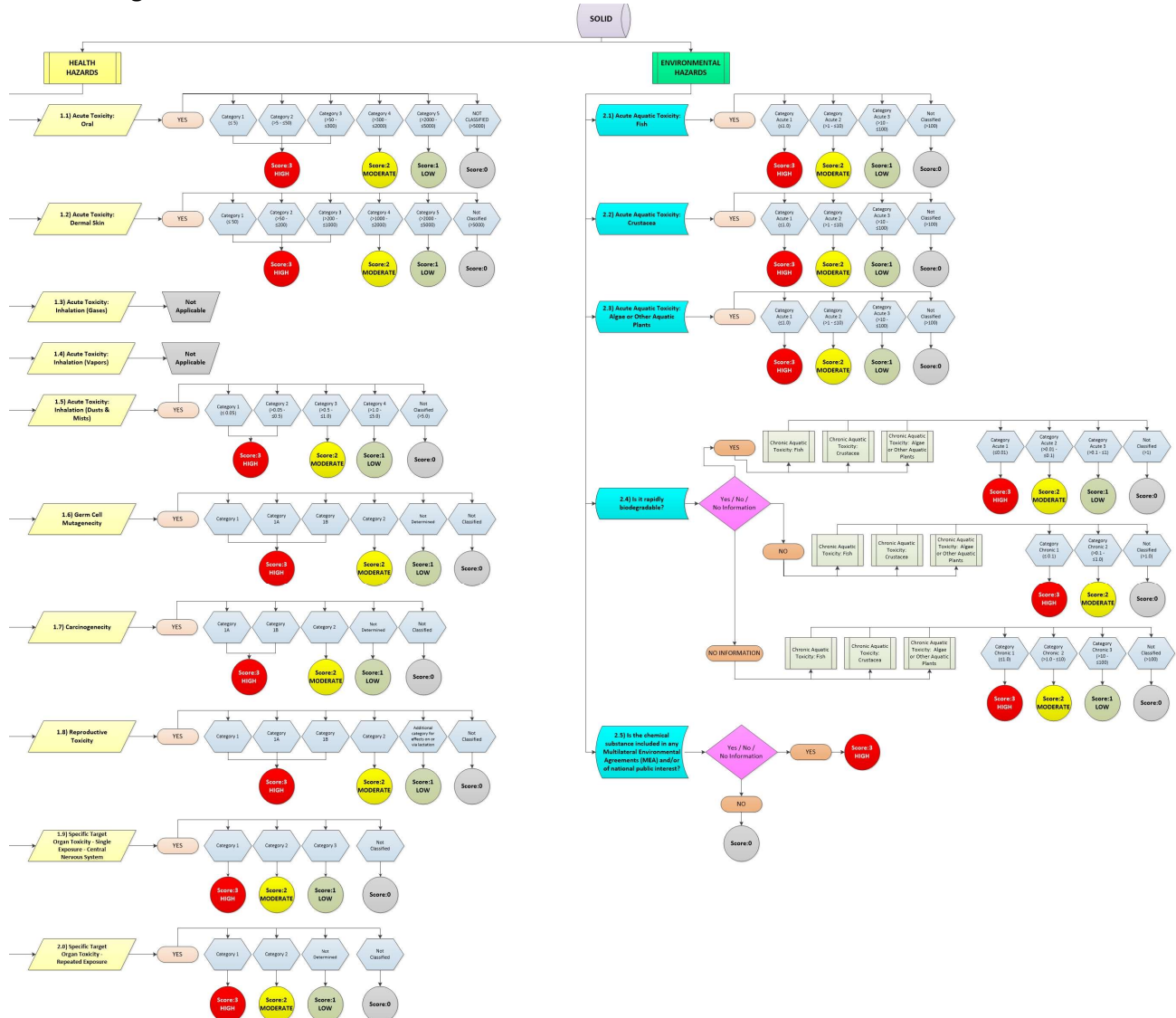


Figure 6. Overview of Hazard Identification for Liquid

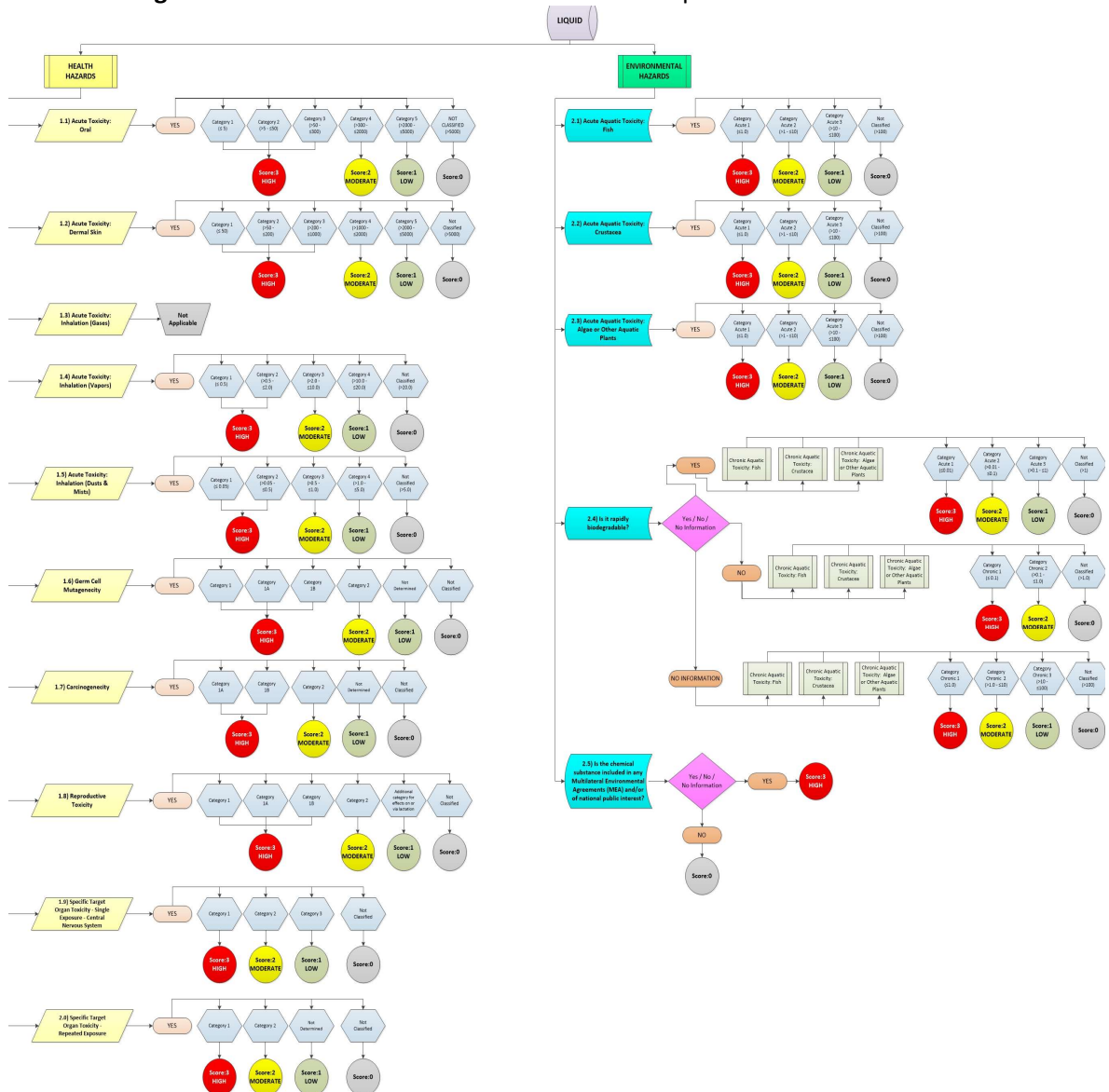
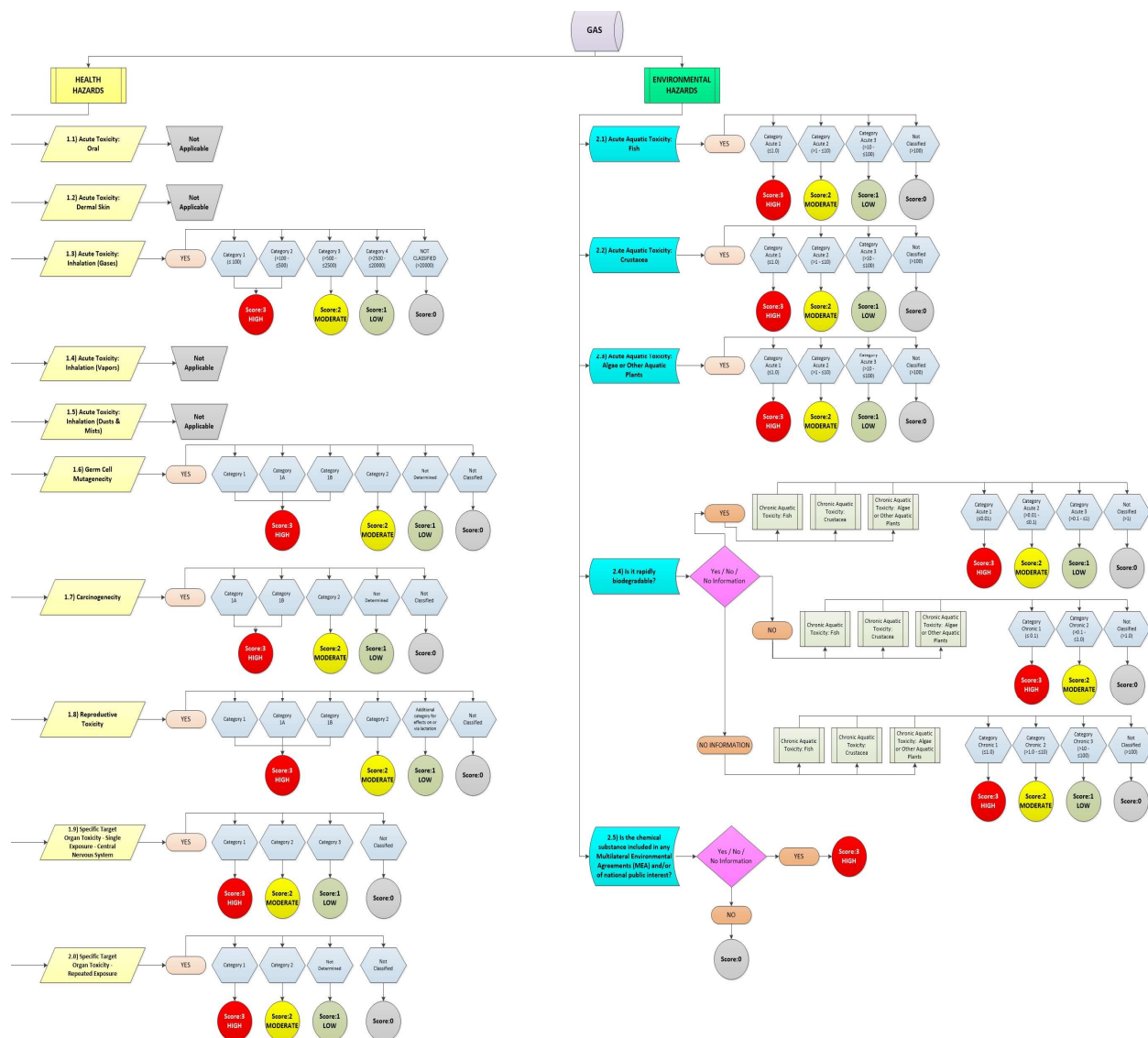
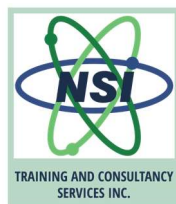


Figure 7. Overview of Hazard Identification for Gas





2.3 Hazard Information. The use of information should be carefully reviewed and assessed based on relevance (new hazard information should be used).

- a. Current EMB Database for PMPIN applications (i.e. hazard data).
- b. OECD Echemportal – Consolidated data from multiple sources, including US, Canada, EU, Japan, Korea, Australia, etc.
- c. Published literature from peer-reviewed journal articles

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3. Scoring

3.1 Hazard Classification (Toxicity to Health and Environment). The Hazard Score includes both human **health and environmental toxicity information**. The hazard classification criteria of evaluating and differentiating chemicals of their human health and environmental hazards are based on the approved national version GHS (United Nations (2019). Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Eighth revised edition). The Hazard Score is determined based on 4 hazard levels and each hazard level will have a corresponding hazard rank (High = 3, Medium = 2, Low = 1, and Not Classified = 0).

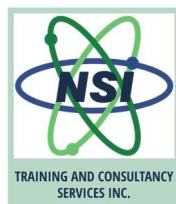
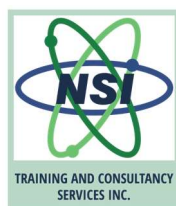
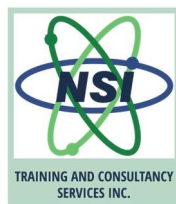


Table 4. Hazard Ranking Based on GHS Classification

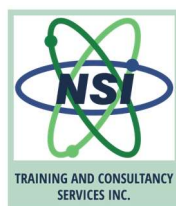
Ranking	High	Medium	Low	Not Classified
	3	2	1	0
Health Hazards: The relevance of the route of exposure used in the study of the substance compared to the route of human exposure should also be considered.				
Acute Toxicity: Oral LD50 (mg/kg)	Category 1-3 ≤ 300	Category 4 >300 - ≤ 2000	Category 5 >2000 - ≤ 5000	Not Classified >5000
Acute Toxicity: Dermal - Skin LD50 (mg/kg)	Category 1-3 ≤ 1000	Category 4 >1000 - ≤ 2000	Category 5 >2000 - ≤ 5000	Not Classified >5000
Acute Toxicity: Inhalation LC ₅₀ – Gases (ppmV)	Category 1-2 ≤ 500	Category 3 >500 - ≤ 2500	Category 4 >2500 – ≤ 20000	Not Classified >20000
Acute Toxicity: Inhalation LC50 – Vapors (mg/L)	Category 1-2 ≤ 2.0	Category 3 >2.0 - ≤ 10.0	Category 4 >10.0 - ≤ 20.0	Not Classified >20.0
Acute Toxicity: Inhalation LC50 – Dusts and Mists (mg/L)	Category 1-2 ≤ 0.5	Category 3 >0.5 - ≤ 1.0	Category 4 >1.0 - ≤ 5.0	Not Classified >5.0
Germ Cell Mutagenicity	Category 1: Substances known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans.	Category 2: Substances which cause concern for humans owing to the possibility that they may induce heritable mutations in the germ cells of humans	Not determined. Insufficient information for classification. Instances where a single well-conducted test is used for classification, it should provide clear and unambiguously positive results.	Not Classified



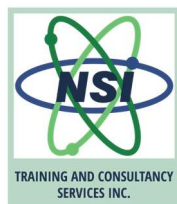
Ranking	High	Medium	Low	Not Classified
	3	2	1	0
	<p>Category 1A: Substances known to induce heritable mutations in germ cells of humans.</p> <p>Category 1B: Substances which should be regarded as if they induce heritable mutations in the germ cells of humans.</p>			
Carcinogenicity	<p>Category 1: Known or presumed human carcinogens.</p> <p>Category 1A: Known to have carcinogenic potential for humans; the placing of a substance is largely based on human evidence.</p>	Category 2: Suspected human carcinogens	<p>Not determined. Insufficient information for classification. Instances where a single well-conducted test is used for classification, it should provide clear and unambiguously positive results.</p>	Not Classified



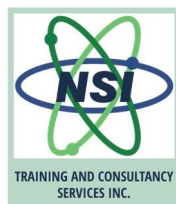
Ranking	High	Medium	Low	Not Classified
	3	2	1	0
	Category 1B: Presumed to have carcinogenic potential for humans; the placing of a substance is largely based on animal evidence.			
Reproductive Toxicity	<p>Category 1: Known or presumed human reproductive toxicant.</p> <p>Category 1A: Known human reproductive toxicant.</p> <p>Category 1B: Presumed human reproductive toxicant</p>	Category 2: Suspected human reproductive toxicant	Evidence showing effects on or via lactation. Not determined. Insufficient information for classification. Instances where a single well-conducted test is used for classification, it should provide clear and unambiguously positive results.	Not Classified
Specific Target Organ Toxicity – Single Exposure	Category 1: Substances that have produced significant toxicity in humans, or that, on the	Category 2: Substances that, on the basis of evidence from studies in experimental animals can be	Category 3: Transient target organ effects. Not determined. Insufficient information for classification.	Not Classified



Ranking	High	Medium	Low	Not Classified
	3	2	1	0
	basis of evidence from studies in experimental animals can be presumed to have the potential to produce significant toxicity in humans following single exposure.	presumed to have the potential to be harmful to human health following single exposure	Instances where a single well-conducted test is used for classification, it should provide clear and unambiguously positive results.	
Specific Target Organ Toxicity – Repeated Exposure	Category 1: Substances that have produced significant toxicity in humans, or that, on the basis of evidence from studies in experimental animals can be presumed to have the potential to produce significant toxicity in humans following	Category 2: Substances that, on the basis of evidence from studies in experimental animals can be presumed to have the potential to be harmful to human health following repeated exposure	Not determined. Insufficient information for classification. Instances where a single well-conducted test is used for classification, it should provide clear and unambiguously positive results.	Not Classified



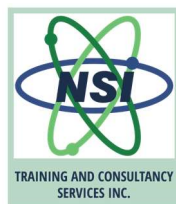
Ranking	High	Medium	Low	Not Classified
	3	2	1	0
	repeated exposure			
Environmental Hazards				
Acute Aquatic Toxicity: (LC ₅₀ or EC ₅₀ or ErC ₅₀) (Fishes or Crustaceans or Algae or other aquatic plants)	Category 1 ≤ 1.0	Category 2 >1 - ≤ 10	Category 3 >10 - ≤ 100	Not Classified >100
Non-rapidly degradable substances (Note 4) for which there are adequate chronic toxicity data available. Chronic NOEC or ECx (Fishes or Crustaceans or Algae or other aquatic plants)	Category 1 ≤ 0.1	Category 2 >0.1 - ≤ 1.0	Instances where a single well-conducted test is used for classification, it should provide clear and unambiguously positive results	Not Classified >1.0
Rapidly degradable substances for which there are adequate chronic toxicity data available. Chronic NOEC or ECx (Fishes or Crustaceans or Algae or other aquatic plants)	Category 1 ≤ 0.01	Category 2 >0.01 - ≤ 0.1	Category 3 >0.1 - ≤ 1.0	Not Classified >1.0
Substances for which adequate chronic toxicity data are not available.	Category 1 ≤ 1.0	Category 2 >1.0 - ≤ 10	Category 3 >10 - ≤ 100	Not Classified >100



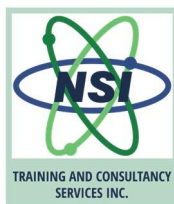
Ranking	High	Medium	Low	Not Classified
	3	2	1	0
Chronic NOEC or ECx (Fishes or Crustaceans or Algae or other aquatic plants)				

Table 5: Summary Reference Table for Hazard Scoring

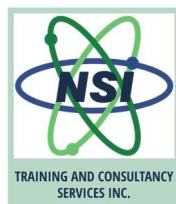
Hazard Assessment		
Health Hazard		
Hazard Class	Specification Values	Score
ACUTE TOXICITY: ORAL (mg/kg)	≤ 300	3
	$> 300 - \leq 2000$	2
	$>2000 - \leq 5000$	1
	>5000 Not Classified	0
ACUTE TOXICITY: DERMAL - SKIN (mg/kg)	≤ 1000	3
	$> 1000 - \leq 2000$	2
	$>2000 - \leq 5000$	1
	>5000 Not Classified	0
ACUTE TOXICITY: INHALATION (GASES) (ppmV)	≤ 500	3
	$>500 - \leq 2500$	2
	$>2500 - \leq 20000$	1
	>20000 Not Classified	0
ACUTE TOXICITY: INHALATION (VAPORS) (mg/L)	≤ 2.0	3
	$>2.0 - \leq 10.0$	2
	$>10.0 - \leq 20.0$	1
	> 20 Not Classified	0
ACUTE TOXICITY: INHALATION (DUSTS AND MISTS) (mg/L)	≤ 0.5	3
	$>0.5 - \leq 1.0$	2
	$> 1.0 - \leq 5.0$	1
	> 5.0 Not Classified	0
GERM CELL MUTAGENICITY	Category 1	3
	Category 1A	3
	Category 1B	3
	Category 2	2
	Not Determined	1



	Not Classified	0
CARCINOGENICITY	Category 1	3
	Category 1A	3
	Category 1B	3
	Category 2	2
	Not Determined	1
	Not Classified	0
REPRODUCTIVE TOXICITY	Category 1	3
	Category 1A	3
	Category 1B	3
	Category 2	2
	Additional category for effects on or via lactation	1
	Not Classified	0
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - CENTRAL NERVOUS SYSTEM	Category 1	3
	Category 2	2
	Category 3	1
	Not Classified	0
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	Category 1	3
	Category 2	2
	Not Determined	1
	Not Classified	0
Environmental Hazard		
Hazard Class	Specification Values	Score
ACUTE AQUATIC TOXICITY: FISH (mg/L)	≤ 1.0	3
	>1 - ≤ 10	2
	>10 - ≤ 100	1
	>100 Not Classified	0
ACUTE AQUATIC TOXICITY: CRUSTACEA (mg/L)	≤ 1.0	3
	>1 - ≤ 10	2
	>10 - ≤ 100	1
	>100 Not Classified	0
ACUTE AQUATIC TOXICITY: ALGAE OR OTHER AQUATIC PLANTS (mg/L)	≤ 1.0	3
	>1 - ≤ 10	2
	>10 - ≤ 100	1
	>100 Not Classified	0
CHRONIC AQUATIC TOXICITY: FISH (mg/L)	Persistent and Rapidly Degradable = YES	
	≤ 0.01	3
	>0.01 - ≤ 0.1	2
	>0.1 - ≤ 1.0	1
	>1.0 Not Classified	0



	Persistent and Rapidly Degradable = NO	
	≤ 0.1	3
	$>0.1 - \leq 1.0$	2
	>1.0 Not Classified	0
	Persistent and Rapidly Degradable = NO INFORMATION	
	≤ 1.0	3
	$>1.0 - \leq 10$	2
	$>10 - \leq 100$	1
	>100 Not Classified	0
CHRONIC AQUATIC TOXICITY: CRUSTACEA (mg/L)	Persistent and Rapidly Degradable = YES	
	≤ 0.01	3
	$>0.01 - \leq 0.1$	2
	$>0.1 - \leq 1.0$	1
	>1.0 Not Classified	0
	Persistent and Rapidly Degradable = NO	
	≤ 0.1	3
	$>0.1 - \leq 1.0$	2
	>1.0 Not Classified	0
	Persistent and Rapidly Degradable = NO INFORMATION	
	≤ 1.0	3
	$>1.0 - \leq 10$	2
	$>10 - \leq 100$	1
	>100 Not Classified	0
CHRONIC AQUATIC TOXICITY: ALGAE OR OTHER AQUATIC PLANTS (mg/L)	Persistent and Rapidly Degradable = YES	
	≤ 0.01	3
	$>0.01 - \leq 0.1$	2
	$>0.1 - \leq 1.0$	1
	>1.0 Not Classified	0
	Persistent and Rapidly Degradable = NO	
	≤ 0.1	3
	$>0.1 - \leq 1.0$	2
	>1.0 Not Classified	0
	Persistent and Rapidly Degradable = NO INFORMATION	
	≤ 1.0	3
	$>1.0 - \leq 10$	2
	$>10 - \leq 100$	1
	>100 Not Classified	0



HAZARDOUS TO THE OZONE LAYER	Chemical included in Multilateral Environmental Agreements (MEA)	3
	None	0

3.2 Prioritization Decision Matrix

The highest hazard rank score a chemical received for any single human health and environmental toxicity endpoint became its Hazard Score. For the chemicals for review under the Health and Environmental Hazards, the following decision matrix is recommended to determine the ranking or priority of chemicals into high, medium, and low for risk assessment.

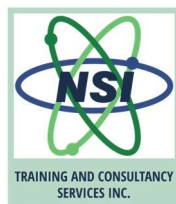
Table 6: Determination of Prioritization

How to Determine the Prioritization		Environmental Hazard (E)			
		High	Medium	Low	Not Classified
Human Health Hazard (H)	High (H)	HH+HE = H1	HH + ME = H3	HH + LE = H5	HH + NE = H7
	Medium (M)	MH + HE = H2	MH + ME = M1	MH + LE = M3	MH + NE = M5
	Low (L)	LH + HE = H4	LH + ME = M2	LH + LE = L1	LH + NE = L3
	Not Classified (N)	NH + HE = H6	NH + ME = M4	NH + LE = L2	NH + NE = L4

Legend:

- a. HH – High Health Hazard
- b. MH – Medium Health Hazard
- c. LH – Low Health Hazard
- d. NH – Not Classified Health Hazard
- e. HE – High Environmental Hazard
- f. ME – Medium Environmental Hazard
- g. LE – Low Environmental Hazard
- h. NE – Not Classified Environmental Hazard

Chemicals classified as high hazard for health or environment are recommended as **High Priority for risk assessment**. In terms of sub-prioritization, the scoring will



prioritize the environmental hazard since this is the primary mandate of the DENR. As such to get the necessary information such as volume and exposure data, the Priority Chemical List will be updated based on the high priority chemicals.

Table 7. Decision Matrix

Health Hazard	PRIORITIZATION			
<i>High</i>	H1	H3	H5	H7
<i>Medium</i>	H2	M1	M3	M5
<i>Low</i>	H4	M2	L1	L3
<i>Not Classified</i>	H6	M4	L2	L4
Environmental Hazard	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Not Classified</i>

3.3 Concerns and Weaknesses of this Model.

- a. Limitations in data availability and the quality of the data are the most common issues encountered during prioritization. This includes the following: Limited/No access to chemical hazard information and risk assessment reports; Limited laboratory testing capabilities (e.g. chronic toxicity testing based on OECD guidelines); and Limited access on exposure data (human and environmental) due to confidentiality.