

# **Guidebook on the HS Classification of Chemicals & Chemical Products**

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Version 1 – Updated June 2016

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## Preface

This guidebook serves as an aid for users to classify chemicals and chemical products according to the Harmonized System (HS) Codes found in Singapore Trade Classification, Customs and Excise Duties (STCCED).

The General Rules for the Interpretation of the Harmonized System, also known as the General Interpretative Rules (GIR), is a set of 6 rules for classifying goods to ensure uniform legal interpretation of the HS Nomenclature for the proper classification of goods. Users of this guide should familiarise themselves with the basic classification principles in order to have a better understanding on the classification of chemicals and chemical products. For more information on basic classification principles, you may refer to the [Harmonized System \(HS\) Classification of Goods \(http://www.customs.gov.sg/businesses/harmonized-system-hs-classification-of-goods\)](http://www.customs.gov.sg/businesses/harmonized-system-hs-classification-of-goods) in the customs website.

## **Disclaimer**

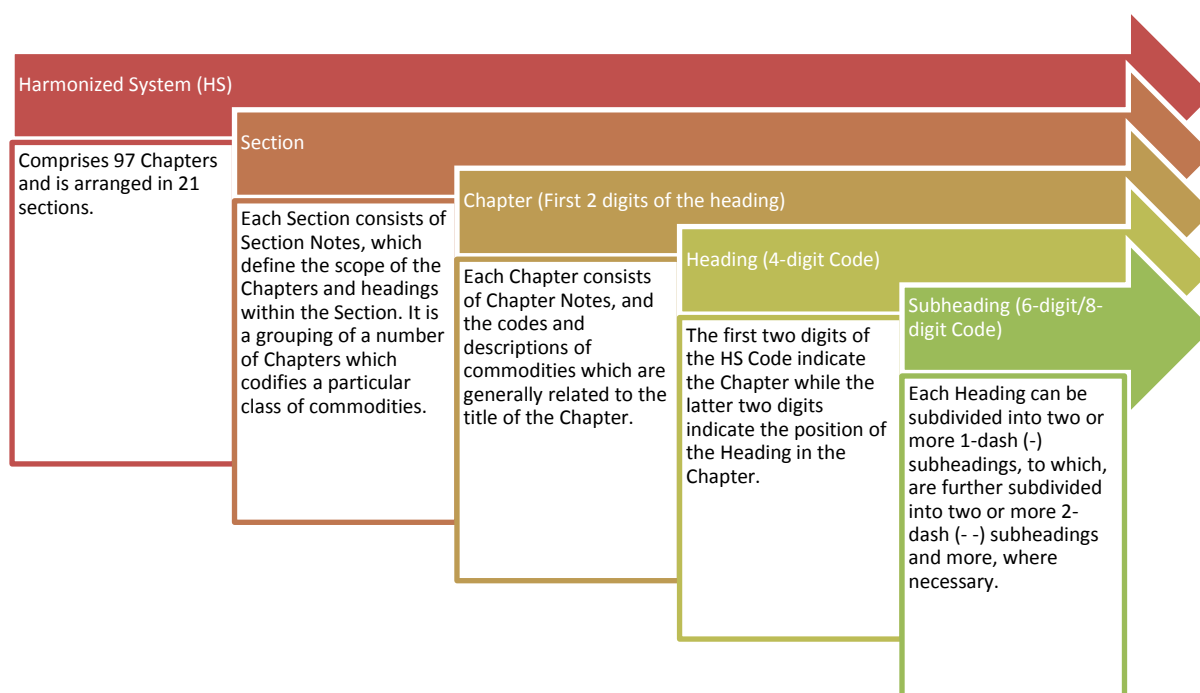
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# 1. Introduction

1.1 The Harmonized System (HS) comprises 21 Sections covering 97 Chapters. It consists of:

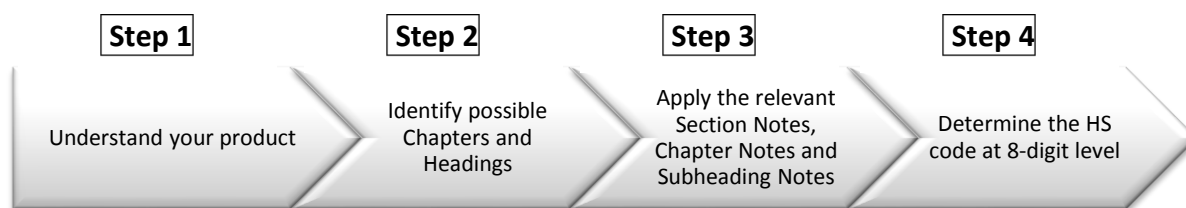
- Section and Chapter Notes, including Subheading Notes
- A list of headings arranged in systematic order, divided into subheadings, where appropriate
- General Interpretative Rules (GIRs)



1.2 Chemicals and chemical products are generally classified in Section VI – Products of the Chemical or Allied Industries, of the HS Nomenclature:

<b>SECTION VI – PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES</b>	
Chapter 28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes
Chapter 29	Organic chemicals
Chapter 30	Pharmaceutical products
Chapter 31	Fertilisers
Chapter 32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks
Chapter 33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations
Chapter 34	Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, “dental waxes” and dental preparations with a basis of plaster
Chapter 35	Albuminoidal substances; modified starches; glues; enzymes
Chapter 36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations
Chapter 37	Photographic or cinematographic goods
Chapter 38	Miscellaneous chemical products

## 2. How to Classify Chemicals and Chemical Products



2.1 The GIRs provide a step-by-step basis for the classification of goods and ensure uniform interpretation of the HS nomenclature. As a general guide, you would need to first understand your product before you can identify the possible HS Chapters and Headings. Once the possible HS Chapters and Headings are identified, check and apply the relevant Section Notes, Chapters Notes and Subheading Notes to obtain the 4-digit HS heading.

2.2 In every case, the goods must first be classified in the appropriate 4-digit HS heading, followed by the appropriate 1-dash subheading, and the appropriate 2-dash subheading within the selected 1-dash subheading and so on, till the 8-digit HS code is obtained.

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**Step 1** Understand your product

2.3 To classify chemicals and chemicals products, you would need to understand the following:

- Is it a separate chemical element, a separate chemically defined compound, or a chemical mixture?

*A separate chemically defined compound is a substance which consists of one molecular species (e.g., covalent or ionic) whose composition is defined by a constant ratio of elements and can be represented by a definitive structural diagram. In a crystal lattice, the molecular species corresponds to the repeating unit.*

- What are the function, intended usage and chemical composition of the product?
- How do the individual chemical components in the product contribute to the function and intended usage?



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**Step 2** Identify possible Chapters and Headings

2.4 Identify the possible chapters and headings based on the chemical composition, function and intended usage of the product.

Separate Chemical Elements and Separate Chemically Defined Compounds

2.5 Separate chemical elements and separate chemically defined compounds (commonly known as pure chemicals) are generally classified in Chapters 28 and 29, depending on whether they are inorganic or organic chemicals. Such chemical elements or compounds, whether or not containing impurities, would remain classified in these Chapters, and could still be classifiable in their respective Chapters when they are mixed with certain substances, provided such additions do **not** render the product particularly suitable for a specific use.

2.6 The presence of by-products or unconverted starting materials as a result of the manufacturing process of a chemical product of Chapter 28 or 29 could be regarded as permissible impurities. The chemical product could still be classified in Chapter 28 or 29 provided that these impurities are **not** deliberately left in the product to render it suitable for a specific use.

*\*Note: If the product is a plastic product, it is possible to be classified in Chapter 39 of Section VII. Refer to Chapter Notes of Chapter 39 to check if the product is classifiable under that Chapter.*

Chemical Mixture

2.7 Chemical mixtures are generally classified in Chapters 30 to 38 based on their intended usage. You should shortlist the possible HS headings according to the intended usage of your product.



**Step 3** **Apply the relevant Section Notes, Chapter Notes and Subheading Notes**

2.8 Examine and apply the Section Notes, Chapter Notes and Subheading Notes of all the identified possible HS headings for the product, in order to identify the most appropriate HS heading.

2.9 The Notes will state the following:

- Definitions and clarifications of certain terms and products
- Classification of certain products in a specific heading that takes precedence over other headings of the Section or the Nomenclature
- Scope of products in specific chapters, headings and subheadings by excluding or including certain group(s) of products

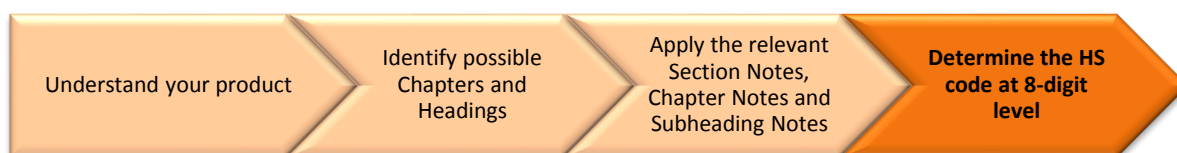
2.10 With reference to Note 1 of Chapter 28 and 29, other than separate chemical elements and separate chemically defined compounds (whether or not containing impurities), your chemical product can be classifiable under Chapter 28 or 29 if:

- The product is dissolved in water;
- The product is dissolved in other solvents provided the solution constitutes a normal and necessary method of putting up these products solely for reasons of safety or for transport
- The product contains an added stabiliser (including an anti-caking agent) for preservation or transport
- The product contains an added anti-dusting agent or a colouring substance to facilitate their identification or for safety reasons, provided that the additions do not render the product particularly useful for specific use rather than for general use

2.11 However, certain separate chemical elements and chemically defined compounds are excluded from Chapter 28 and 29 and are classifiable in other Chapters of the nomenclature. For example, certain separate chemically defined compounds are classified in Chapter 31 (Fertilisers) by Note 3c to Chapter 28 and Note 2f to Chapter 29, **even when they are clearly not used as fertilisers.**

*\*Note: If the product is radioactive, a stable isotope or compound of stable isotope or is related to precious metals or compounds of rare-earth metals, yttrium, scandium or of mercury, please refer to Note 1 of Section VI.*

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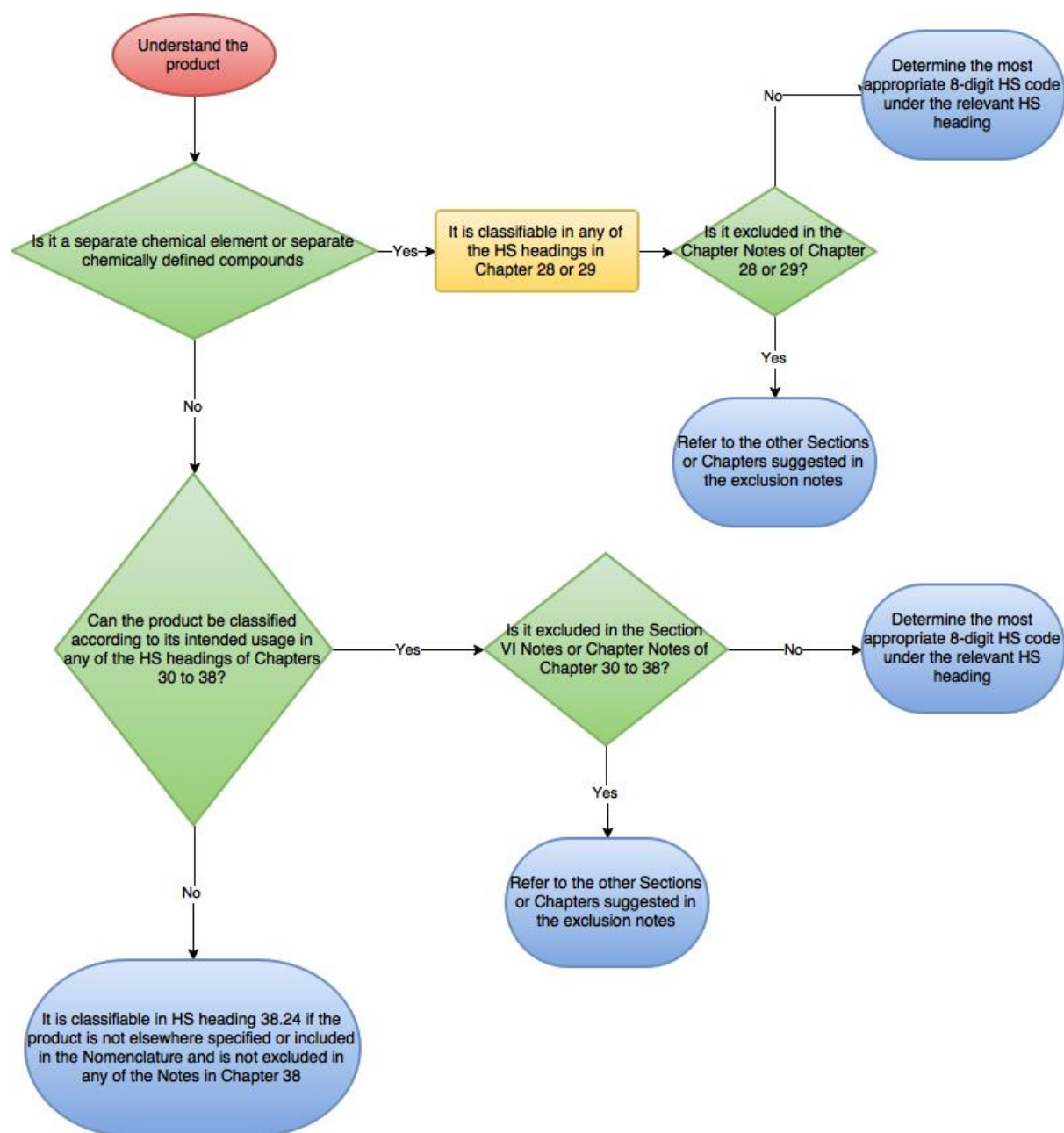


**Step 4** **Determine the HS code at 8-digit level**

2.12 Once the most appropriate HS heading for your product has been identified, compare the HS subheadings within the HS heading to obtain the relevant HS code for your product. Start by comparing the 1-dash descriptions to find the most suitable one. If there is a subsequent breakdown for the 1-dash descriptions, proceed to compare and select the most appropriate 2-dash description under that 1-dash description. Repeat the process if there are further breakdowns under the 2-dash description until you obtain the most appropriate 8-digit HS code for the product.

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Summary Flowchart on how to classify chemicals and chemical products



### 3. Case studies

#### 3.1 Case Study 1 – Hydrogen peroxide

3.1.1 The Material Safety Data Sheet (MSDS) of **hydrogen peroxide** indicates the chemical composition as follows:

Name of Chemical	Percentage by weight (%)
Hydrogen Peroxide (H <sub>2</sub> O <sub>2</sub> )	89
Boric Acid (H <sub>3</sub> BO <sub>3</sub> )	11

3.1.2 The chemical is presented in liquid form.

##### **Step 1** Understand your product

3.1.3 The MSDS is for hydrogen peroxide. However, boric acid is also present in the composition. The function of the boric acid is to stabilise hydrogen peroxide for preservation.

##### **Step 2 & 3** Identify possible Chapters and Headings and apply the relevant Section Notes, Chapter Notes and Subheading Notes.

3.1.4 Based on the information of the product, it is a chemically defined compound with an added stabiliser. Therefore, hydrogen peroxide can be classified in Chapter 28 based on the terms of the heading and the relative section and chapter notes (Note 1 (d) to Chapter 28). The notes to Chapter 28 include the product to be classified in Chapter 28:

<p style="text-align: center;"><b>Chapter 28</b></p> <p style="text-align: center;"><b>Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes</b></p> <p><b>Notes.</b></p> <ol style="list-style-type: none"> <li>Except where the context otherwise requires, the headings of this Chapter apply only to: <ol style="list-style-type: none"> <li>Separate chemical elements and separate chemically defined compounds, whether or not containing impurities;</li> <li>The products mentioned in (a) above dissolved in water;</li> <li>The products mentioned in (a) above dissolved in other solvents provided that the solution constitutes a normal and necessary method of putting up these products adopted solely for reasons of safety or for transport and that the solvent does not render the product particularly suitable for specific use rather than for general use;</li> <li>The products mentioned in (a), (b) or (c) above with an added stabiliser (including an anti-caking agent) necessary for their preservation or transport;</li> </ol> </li> </ol>
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**Step 4** Determine the HS code at 8-digit level

**28.47**                    **Hydrogen peroxide, whether or not solidified with urea.**

2847.00.10           - In liquid form

2847.00.90           - Other

Look at the description of all the 1-dash subheadings first under the appropriate heading. Select the most applicable 1-dash subheading, which in this case, is already the 8-digit HS code. Since the product is hydrogen peroxide in liquid form, it is classified in HS Code 2847.00.10.

## 3.2 Case Study 2 – Camping fuel

3.2.1 The Material Safety Data Sheet (MSDS) of a **camping fuel** indicates the chemical composition as follows:

Name of Chemical	Percentage by weight (%)
<b>Metaldehyde (C<sub>8</sub>H<sub>16</sub>O<sub>4</sub>)</b>	100

3.2.2 The chemical product is put up in tablet form for use as fuels for camping stoves.

### Step 1 Understand your product

3.2.3 The product contains 100% metaldehyde, and it is a separate chemically defined compound. It is a type of camping fuel in tablet form.

### Step 2 & 3 Identify possible Chapters and Headings and apply the relevant Section Notes, Chapter Notes and Subheading Notes.

3.2.4 It is possible for the product to be classifiable in Chapter 29 (as a separate chemically defined compound) and in Chapter 36 as a combustible preparation. However, Note 2(ij) to Chapter 29 excludes the product to be classified in Chapter 29 and Note 1 and 2 (a) to Chapter 36 includes the product to be classified in Chapter 36. Therefore, the product is to be classified in Chapter 36, HS heading 36.06.

#### **Note 2 to Chapter 29: Organic chemicals:**

2. This Chapter does not cover:
  - (a) Goods of heading 15.04 or crude glycerol of heading 15.20;
  - (b) Ethyl alcohol (heading 22.07 or 22.08);
  - (c) Methane or propane (heading 27.11);
  - (d) The compounds of carbon mentioned in Note 2 to Chapter 28;
  - (e) Immunological products of heading 30.02;
  - (f) Urea (heading 31.02 or 31.05);
  - (g) Colouring matter of vegetable or animal origin (heading 32.03), synthetic organic colouring matter, synthetic organic products of a kind used as fluorescent brightening agents or as luminophores (heading 32.04) or dyes or other colouring matter put up in forms or packings for retail sale (heading 32.12);
  - (h) Enzymes (heading 35.07);
  - (ij) Metaldehyde, hexamethylenetetramine or similar substances, put up in forms (for example, tablets, sticks or similar forms) for use as fuels, or liquid or liquefied-gas fuels in containers of a kind used for filling or refilling cigarette or similar lighters and of a capacity not exceeding 300 cm<sup>3</sup> (heading 36.06);

**Note 1 and 2 to Chapter 36 (Explosive; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations):**

**Chapter 36**

**Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations**

**Notes.**

1. This Chapter does not cover separate chemically defined compounds other than those described in Note 2 (a) or (b) below.
2. The expression “articles of combustible materials” in heading 36.06 applies only to :
  - (a) Metaldehyde, hexamethylenetetramine and similar substances, put up in forms (for example, tablets, sticks or similar forms) for use as fuels; fuels with a basis of alcohol, and similar prepared fuels, in solid or semi-solid form;
  - (b) Liquid or liquefied-gas fuels in containers of a kind used for filling or refilling cigarette or similar lighters and of a capacity not exceeding 300 cm<sup>3</sup>; and
  - (c) Resin torches, firelighters and the like.

**Identify the relevant HS heading in the Chapter:**

<b>36.06</b>	<b>Ferro-cerium and other pyrophoric alloys in all forms; articles of combustible materials as specified in Note 2 to this Chapter.</b>
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**Step 4 Determine the HS code at 8-digit level**

**36.06 Ferro-cerium and other pyrophoric alloys in all forms; articles of combustible materials as specified in Note 2 to this Chapter.**

3606.10.00	- Liquid or liquefied-gas fuels in containers of a kind used for filling or refilling cigarette or similar lighters and of a capacity not exceeding 300 cm <sup>3</sup>
3606.90	- Other :
3606.90.10	- - Solid or semi-solid fuels, solidified alcohol and similar prepared fuels
3606.90.20	- - Lighter flints
3606.90.30	- - Other ferro-cerium and other pyrophoric alloys in all forms
3606.90.40	- - Resin torches, firelighters and the like
3606.90.90	- - Other

Look at the description of all the 1-dash subheadings first under the appropriate heading. Select the most applicable 1-dash subheading. In this case, since the product is not liquid or liquefied-gas fuels in containers of a kind used for filling or refilling cigarette or similar lighters and of a capacity not exceeding 300 cm<sup>3</sup>, it is not to be classified in the 3606.10.00.

**36.06 Ferro-cerium and other pyrophoric alloys in all forms; articles of combustible materials as specified in Note 2 to this Chapter.**

3606.10.00	- Liquid or liquefied-gas fuels in containers of a kind used for filling or refilling cigarette or similar lighters and of a capacity not exceeding 300 cm <sup>3</sup>
3606.90	- Other :
3606.90.10	- - Solid or semi-solid fuels, solidified alcohol and similar prepared fuels
3606.90.20	- - Lighter flints
3606.90.30	- - Other ferro-cerium and other pyrophoric alloys in all forms
3606.90.40	- - Resin torches, firelighters and the like
3606.90.90	- - Other

Moving on to the 2-dash subheading under the most applicable 1-dash subheading, since the product is a camping fuel in tablet form (solid), the 2-dash subheading most applicable to the product is 3606.90.10 (Solid or semi-solid fuels, solidified alcohol and similar prepared fuels).

Thus, the product is classified in HS Code 3606.90.10.

### 3.3 Case Study 3 – Insecticide

3.3.1 The Material Safety Data Sheet (MSDS) of the **insecticide** indicates the chemical composition as follows:

Name of Chemical	Percentage by weight (%)
Acephate	63
Fenvalerate	30
Alcohol-based deodorizing agent	7

3.3.2 The chemical product functions as an insecticide, to exterminate aphids in vegetables. The product is presented in aerosol spray containers, packed for retail sale.

#### **Step 1** Understand your product

3.3.3 The chemical product is a type of insecticide with a mixture of different chemicals, each serving different function. The chemical composition renders the product particularly suitable for a specific use, that is, an insecticide.

#### **Step 2** Identify possible Chapters and Headings

3.3.4 As it is an insecticide, it can be classified in Section VI HS heading 38.08.

#### **Step 3** Apply the relevant Section Notes, Chapter Notes and Subheading Notes

3.3.5 The Subheading Note 1 in Chapter 38 listed out the goods covered under the HS Subheading 3808.50.

#### **Step 4** Determine the HS code at 8-digit level

3.3.6 To start, compare the descriptions of 1 dash subheadings under the appropriate heading and choose the correct 1 dash. Next, repeat the process for the subsequent lines with 2 or more dashes.

**38.08 Insecticides, rodenticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products, put up in forms or packings for retail sale or as preparations or articles (for example, sulphur-treated bands, wicks and candles, and fly-papers).**

3808.50 - Goods specified in Subheading Note 1 to this Chapter

3808.50.10 - - Insecticides

- - Fungicides:

3808.50.21 - - - In aerosol containers

3808.50.29 - - - Other

- - Herbicides:

3808.50.31 - - - In aerosol containers

3808.50.39 - - - Other

3808.50.40 - - Anti-sprouting products

3808.50.50 - - Plant-growth regulators

3808.50.60 - - Disinfectants

- - Other:

3808.50.91 - - - Wood preservatives, being preparation containing insecticides or fungicides

3808.50.99 - - - Other

- Other:

3808.91 - - Insecticides:

- Other:

3808.91 - - Insecticides:

- - - Intermediate preparations for the manufacture of insecticides:

3808.91.11 - - - - Containing 2-(1-methylpropyl) phenol methylcarbamate

3808.91.19 - - - - Other

3808.91.20 - - - In the form of mosquito coils

3808.91.30 - - - In the form of mosquito mats

- - - Other

- - - - In aerosol containers:

3808.91.91 - - - - - Having a deodorising function

Look at the description of all the 1-dash subheadings first under the appropriate heading. Select the most applicable 1-dash subheading. In this case, since the product is not a type of goods specified in Subheading Note 1 to Chapter 38, it is not to be classified in the 3808.5x series. Therefore, ignore the 2-dash, 3-dash subheadings under the 1-dash subheading (Goods specified in Subheading Note 1 to Chapter 38) and move on to the other 1-dash subheading (Other).

Moving on to the 2-dash subheading under the most applicable 1-dash subheading, since the product is an insecticide, this 2-dash subheading is the most applicable for the product.

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- Other:

3808.91 -- Insecticides:

--- Intermediate preparations for the manufacture of insecticides:

3808.91.11 ---- Containing 2-(1-methylpropyl) phenol methylcarbamate

3808.91.19 ---- Other

3808.91.20 --- In the form of mosquito coils

3808.91.30 --- In the form of mosquito mats

--- Other

---- In aerosol containers:

3808.91.91 ----- Having a deodorising function

Moving on to the 3-dash subheading under the most applicable 2-dash subheading (3808.91), since the product is the final product, presented in aerosol spray containers, packed for retail sale, the following 3-dash subheadings are not applicable:

--- Intermediate preparations for the manufacture of insecticides

--- In the form of mosquito coils

--- In the form of mosquito mats.

Thus, the last 3-dash subheading (Other) is the most applicable description for the product.

- Other:

3808.91 -- Insecticides:

--- Intermediate preparations for the manufacture of insecticides:

3808.91.11 ---- Containing 2-(1-methylpropyl) phenol methylcarbamate

3808.91.19 ---- Other

3808.91.20 --- In the form of mosquito coils

3808.91.30 --- In the form of mosquito mats

--- Other

---- In aerosol containers:

3808.91.91 ----- Having a deodorising function

3808.91.92 ----- Other

Moving on to the 4-dash subheading under the most applicable 3-dash subheading (Other), since the product is presented in aerosol spray containers, packed for retail sale, the 4-dash subheading description "In aerosol containers" is the most applicable description.

Moving on to the 5-dash subheading under the most applicable 4-dash subheading (In aerosol containers), since the product contains deodorizing agents, it is most appropriate to be classified in the 5-dash subheading (Having a deodorizing function).

Thus, the product is classified in HS Code 3808.91.91.

## 4. Frequently Asked Questions

Q1) I have a 10-digit HS code provided by my overseas supplier for their chemical product. Can I use the first 8-digit for import into Singapore?

The HS is internationally harmonized only at the 6-digit level. You may use the HS code provided by your overseas supplier as a reference and determine the 8-digit HS code which is most appropriate and applicable to your product from our online version of the Singapore Trade Classification, Customs & Excise Duties ([STCCED](#)) or make use of the [HS/CA Product Code](#) search engine.

Q2) What information do I need to determine the HS code of chemical products?

To determine the HS code, you may need the following information:

- chemical composition adding up to 100%
- chemical structure
- product usage
- form (i.e. powder, liquid)

The information could be found in the product catalogue/brochure or the product's Material Safety Data Sheet (MSDS).

Q3) Can I determine the HS code of a chemical product using its CAS Registry Number?

Chemical Abstracts Service Registry Number (CAS RN) is a unique number tagged to a chemical by the American Chemical Society and is used internationally to identify chemicals. For chemicals with CAS RN, you may refer to our Alphabetical Index to Singapore Trade Classification, Customs and Excise Duties.

However, since the list is not exhaustive, you may also refer to Europa website ([http://ec.europa.eu/taxation\\_customs/dds2/ecics/chemicalsubstance\\_consultation.jsp?Lang=en](http://ec.europa.eu/taxation_customs/dds2/ecics/chemicalsubstance_consultation.jsp?Lang=en)) for assistance. Do note that the Europa website is meant as a guide and traders are advised to make reference to the Singapore Trade Classification, Customs and Excise Duties publication for the 8-digit HS code.

The next alternative is to research on the chemical structure and its functionality of the chemical in the web, and determine the most appropriate HS code in Singapore Trade Classification, Customs and Excise Duties.

Q4) Is there a specific HS heading for washing preparations for cleaning industrial machines?

If the washing preparation is in the form of bar, cake, moulded piece or shape, they would be classified in HS heading 34.01. Otherwise, it would be classified under HS heading 34.02 if it is in other forms (e.g. liquid, pastes, etc.) not specified in HS heading 34.01.

## 5. Resources

- 5.1 Singapore Trade Classification, Customs & Excise Duties:  
<http://www.customs.gov.sg/businesses/harmonized-system-hs-classification-of-goods/resources/singapore-trade-classification-customs-excise-duties-stcced>
- 5.2 Harmonized System/Competent Authority (HS/CA) Product Code Search & Customs Ruling Database:  
<http://www.customs.gov.sg/businesses/harmonized-system-hs-classification-of-goods/resources/harmonized-system-competent-authority-product-code-search>
- 5.3 Combined Nomenclature (CN) code by European Union on chemicals:  
[http://ec.europa.eu/taxation\\_customs/dds2/ecics/chemicalsubstance\\_consultation.jsp?Lang=en](http://ec.europa.eu/taxation_customs/dds2/ecics/chemicalsubstance_consultation.jsp?Lang=en)