

## Instructions for Accessing and Using Chem Gold III MSDS Databases for Purchasing and Safety Information

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### Using ChemGold III

#### Connecting to ChemGold III

- Access **Library** via University of Auckland Homepage
- Access **Database**
- Select “**C**” and then scroll through databases and select **ChemGold III**
- Connect to ChemGold III

You will then be linked to a connection to ChemGold III

[Hint: Add Chem Gold Connect Page to Favourites – it is not recommended that you shortcut the ChemGold site directly as the University connection may be rerouted without warning]

#### Performing a Search

You will be presented with a single page with full functionality and a search engine section

Functionality is grouped into three sets of buttons on the LHS:

- The top set has summary, sections, transport and toxicity
- The middle set enables you to access a number of different types of MSDS, Emergency information and labels
- The bottom set of buttons enables you to access regulatory information and monographs for the compound of interest



1. Enter the name of the compound you wish to search in the search engine – enter the compound name or name of manufacturer and press **Search**
2. You will then be presented with the results of the search engine screen which will present you with a range of compounds - select the compound descriptor that matches your item



Press 'Summary button on the LHS (toward the top) which will give you the summary of data on the chemical of interest which was the default page used in Chemgold II

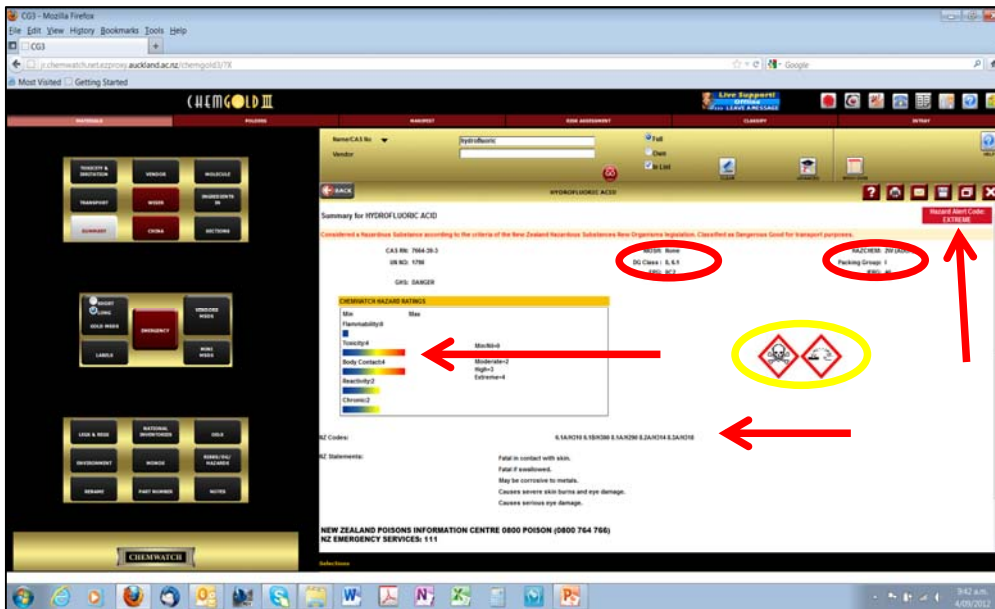
The screenshot shows the Chemgold III software interface. The main content area displays the summary for Hydrofluoric Acid. Key information includes:

- Name:** hydrofluoric
- CAS No:** 7664-39-3
- UN No:** 1790
- HAZCHEM:** 7W
- DG Class:** 8, 6.1
- EPG:** 8C2
- ERG:** 40
- Chemwatch Hazard Ratings:**
  - Flammability: 0
  - Toxicity: 4
  - Body Contact: 4
  - Reactivity: 2
  - Chronic: 2
- Hazard Alert Code:** EXTREME
- HZ Codes:** 6.1A 6.1B 8.1A 8.2A 8.3A
- HZ Statements:**
  - Fatal in contact with skin.
  - Fatal if swallowed.
  - May be corrosive to metals.
  - Causes severe skin burns and eye damage.
  - Causes serious eye damage.

## Finding the Level of Hazard

There are a number of classifications and cues that give the user valuable information on the degree of hazard:

1. The Hazard Alert in the top RHS of the summary page.
2. The bar graphs on the LHS
3. The hazard pictograms (in this case clearly indicating toxicity and corrosiveness)
4. UN Hazard Class (see further information below)
5. NZ HSNO Classification under "NZ Codes" at the bottom of the page
6. Risk Phrases under "NZ Statements"
7. International Risk Phrases are given in the Risk and Safety Phases in the Bottom Panel of buttons (see Page 7 for more information and refer to Appendix for a complete list of Risk Phrases)



### Finding UN Hazard Code

The UN Hazard Class (if the compound is considered hazardous under the UN Hazard Classification is given by the term “DG Class” on the second row (middle). If you need to know the degree of hazard then the Packing Group (second Row, RHS) is useful – packing Group 1 is most hazardous and Packing Group 3 is least hazardous.

The picture below shows the relative position of the UN Class and Packing Group on the relevant screen

UN Number – these numbers are used only for transport and are not relevant to UN Hazard Class.

Please also note that some compounds will be classified as hazardous under HSNO and not the UN classification. The HSNO classification can be found on this page just under bar graphs entitled “Chemwatch Hazard Ratings” in a section called “NZ Codes”

**Note that Purchasing protocols only require UN Hazard Class.**

The screenshot shows the ChemGold III software interface. At the top, there are navigation tabs: MATERIALS, FOLDERS, MANIFEST, RISK ASSESSMENT, CLASSIFY, and INTRAY. A search bar contains 'Hydrofluoric'. Below the search bar, there are buttons for 'Full', 'Own', and 'In List'. The main content area displays the 'Summary for HYDROFLUORIC ACID'. It includes the CAS RN: 7664-39-3, UN NO: 1799, and GHS: DANGER. A 'CHEMWATCH HAZARD RATINGS' section shows bar graphs for Flammability (0), Toxicity (4), Body Contact (4), Reactivity (2), and Chronic (2). To the right, there are GHS hazard pictograms for Corrosive and Highly Flammable. The interface also shows 'HZ Codes: 6.1A 6.1B 8.1A 8.1A 8.1A' and 'HZ Statements: Fatal in contact with skin. Fatal if swallowed. May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage.'

## While you are in ChemGold – How to Use the MSDS Data

### Using the Data

Functionality is grouped into three sets of buttons on the LHS:

- The top set has summary, sections, transport and toxicity
- The middle set enables you to access a number of different types of MSDS, Emergency information and labels
- The bottom set of buttons enables you to access regulatory information and monographs for the compound of interest

#### A. Top Panel

##### 1. Summary page

You will be presented with the summary page for the compound of interest that was the default page for ChemGold II – this page will give you the UN Number, UN Class, packing group etc as well as the primary hazards and bar graphs showing relative hazards involved

##### 2. Sections

You can also 'drill down' by selecting the **Sections** option (on LHS) which displays the 10 different including **Ingredients**, **Health Hazards**, **Toxicological properties**, **Physical Properties**, **Environmental**, **Emergency Information** etc.

This can be a useful feature if you want to find out more about the type of paint or compare say the flashpoint of solvents. If you go through **Search** function and select another compound you will be presented with the same page for that compound.

### 3. Transport Information

Selecting Transport option on the RHS gives you ability to download:

- Dangerous Goods Declaration as a pdf for the compound concerned (select Product Safety Card option)
- Emergency information as a pdf (Select TREM option)

The screenshot displays the Chemwatch III interface for Hydrofluoric Acid. The main panel shows the following information:

- Name/CAS No:** Hydrofluoric
- Vendor:** (input field)
- Summary for HYDROFLUORIC ACID:** Marked Alert Code: EXTREME
- Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.**
- CAS No:** 7664-39-3
- EM No:** 1208
- MSDS:** None
- DU Class:** 5, 6, 1
- EPG:** BC7
- HS Code:** 2901
- Packing Group:** I
- REG:** 49
- GHG:** DANGER
- CHEMWATCH HAZARD RATINGS:**

Min	Max
Flammability: 0	0
Toxicity: 1	1
Body Contact: 4	4
Reactivity: 2	2
Chronic: 2	2
- HZ Codes:** 6.1A 6.1B 6.1A 6.1A 6.1A
- HZ Statements:** Fatal in contact with skin. Fatal if swallowed. May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage.

### 4. Toxicity and Irritation

Selecting this button enables you to view varied sources of LD50 data and data for toxicity

#### B. Middle Panel

##### 1. Emergency Information

When the search results are presented, select the compound and press the Emergency button on the LHS. There are buttons on top of the Emergency page for spills, First Aid, Advice to doctor and Fire fighting.

## 2. MSDS

Different MSDS are available including those compiled by Chemwatch, vendors and a one page mini-MSDS. There is also a label making option available.

### C. **Bottom Panel**

1. Legs and Regs  
This gives regulatory and legislative requirements for a number of different countries, including New Zealand
2. OELs  
Gives Occupational Exposure levels for different countries, including NZ and can be used for comparison
3. Risks/DG/Hazards  
Gives Risk and Safety Phrases for different vendors and countries (refer to Appendix for a complete list of Risk Phrases)
4. Monos  
Gives published monographs to support the data in MSDS sheets

### **Help Function**

Available on the top of each page as a blue button with a 'Questionmark'. It will explain some of the acronyms involved.

## Appendix: Risk Phrases

Code	Phrase
R1	Explosive when dry
R2	Risk of explosion by shock, friction, fire or other sources of ignition
R3	Extreme risk of explosion by shock, friction, fire or other sources of ignition
R4	Forms very sensitive explosive metallic compounds
R5	Heating may cause an explosion
R6	Explosive with or without contact with air
R7	May cause fire
R8	Contact with combustible material may cause fire
R9	Explosive when mixed with combustible material
R10	Flammable
R11	Highly flammable
R12	Extremely flammable
R14	Reacts violently with water
R15	Contact with water liberates extremely flammable gases
R16	Explosive when mixed with oxidising substances
R17	Spontaneously flammable in air
R18	In use, may form flammable/explosive vapour-air mixture
R19	May form explosive peroxides
R20	Harmful by inhalation
R21	Harmful in contact with skin
R22	Harmful if swallowed
R23	Toxic by inhalation
R24	Toxic in contact with skin
R25	Toxic if swallowed
R26	Very toxic by inhalation
R27	Very toxic in contact with skin
R28	Very toxic if swallowed
R29	Contact with water liberates toxic gas.
R30	Can become highly flammable in use
R31	Contact with acids liberates toxic gas
R32	Contact with acids liberates very toxic gas
R33	Danger of cumulative effects
R34	Causes burns
R35	Causes severe burns
R36	Irritating to eyes
R37	Irritating to respiratory system
R38	Irritating to skin
R39	Danger of very serious irreversible effects
R40	Limited evidence of a carcinogenic effect
R41	Risk of serious damage to eyes
R42	May cause sensitisation by inhalation



R43	May cause sensitisation by skin contact
R44	Risk of explosion if heated under confinement
R45	May cause cancer
R46	May cause heritable genetic damage
R48	Danger of serious damage to health by prolonged exposure
R49	May cause cancer by inhalation
R50	Very toxic to aquatic organisms
R51	Toxic to aquatic organisms
R52	Harmful to aquatic organisms
R53	May cause long-term adverse effects in the aquatic environment
R54	Toxic to flora
R55	Toxic to fauna
R56	Toxic to soil organisms
R57	Toxic to bees
R58	May cause long-term adverse effects in the environment
R59	Dangerous for the ozone layer
R60	May impair fertility
R61	May cause harm to the unborn child
R62	Possible risk of impaired fertility
R63	Possible risk of harm to the unborn child
R64	May cause harm to breast-fed babies
R65	Harmful: may cause lung damage if swallowed
R66	Repeated exposure may cause skin dryness or cracking
R67	Vapours may cause drowsiness and dizziness
R68	Possible risk of irreversible effects

## Risk Phrase Combinations

Code Combination	Statement
R14/15	Reacts violently with water, liberating extremely flammable gases
R15/29	Contact with water liberates toxic, extremely flammable gases
R20/21	Harmful by inhalation and in contact with skin
R20/22	Harmful by inhalation and if swallowed
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R21/22	Harmful in contact with skin and if swallowed
R23/24	Toxic by inhalation and in contact with skin
R23/25	Toxic by inhalation and if swallowed
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R24/25	Toxic in contact with skin and if swallowed
R26/27	Very toxic by inhalation and in contact with skin
R26/28	Very toxic by inhalation and if swallowed
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R27/28	Very toxic in contact with skin and if swallowed
R36/37	Irritating to eyes and respiratory system

R36/38	Irritating to eyes and skin
R36/37/38	Irritating to eyes, respiratory system and skin
R37/38	Irritating to respiratory system and skin
R39/23	Toxic: danger of very serious irreversible effects through inhalation
R39/24	Toxic: danger of very serious irreversible effects in contact with skin
R39/25	Toxic: danger of very serious irreversible effects if swallowed
R39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R39/26	Very Toxic: danger of very serious irreversible effects through inhalation
R39/27	Very Toxic: danger of very serious irreversible effects in contact with skin
R39/28	Very Toxic: danger of very serious irreversible effects if swallowed
R39/26/27	Very Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/26/28	Very Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R39/27/28	Very Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/26/27/28	Very Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R42/43	May cause sensitization by inhalation and skin contact
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
R48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed

R48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R68/20	Harmful: possible risk of irreversible effects through inhalation
R68/21	Harmful: possible risk of irreversible effects in contact with skin
R68/22	Harmful: possible risk of irreversible effects if swallowed
R68/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin
R68/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed
R68/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed
R68/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed