









# UN Classification of Chemical Hazards






(UN Dangerous Goods Transport Regulations)



(Courtesy of AA Directions – Autumn 2006)

## UN Hazard Identification System With examples

<b>Explosives</b>	<b>UN Class 1 - Explosives</b>	
<b>Gases</b>	<b>UN Class 2.1 - Flammable Gas</b> Hydrogen Acetylene	
	<b>UN Class 2.2 – nontoxic, non flammable Compressed Gases</b>  Examples: Carbon dioxide Nitrogen Air	
<b>** Toxic Gases</b>	<b>UN Class 2.3 - Toxic Gases</b> See examples below	
<b>Flammable Liquids</b>	<b>UN Class 3.1 - Flammable Liquid</b>  Flammable solvents – xylene, toluene, ethanol, methanol, hexane, acetonitrile Paint Thinners Spray Thinners Turpentine	
<b>** Flammable Solids</b>	<b>UN Class 4.1 - Flammable Solids</b> Reactive solids – Metal powders such as magnesium, desensitised explosives such as Picric acid	
	<b>UN Class 4.2 – Spontaneously Combustible Solids</b>	
	<b>UN Class 4.3 – Dangerous When Wet e.g. Hydrides</b>	

<b>Oxidising Substances</b>	<p><b>UN Class 5.1 - Oxidising Substances</b>  Nitrates, perchlorates, perborates, permanganates, perchloric acid, sodium hypochlorite (bleach), and chromic acid</p> <p>Oxygen gas</p>	
	<p>UN Class 5.2 - Organic Peroxide</p>	
<b>** Highly Toxic Substances</b>	<p><b>UN Class 6.1, Packing Gp 1- Highly Toxic</b></p> <p>See examples below</p>	
<b>Toxic Substances</b>	<p><b>UN Class 6.1, Packing Gps 2 and 3</b></p>	
<b>Corrosive Substances</b>	<p><b>UN Class 8 – Corrosives</b>  Any Acid  Including phosphoric, acetic, sulfuric nitric and hydrochloric acids  Any caustic such sodium hydroxide, ammonia</p>	

### **Some examples of UN Class 2.3 substances – Toxic Gases**

Ammonia, anhydrous  
Boron Trichloride (trichloroborane)  
Boron Trifluoride  
Carbon Monoxide  
Carbonyl Sulphide  
Chlorine  
Dinitrogen tetroxide  
Ethylene Oxide or Ethylene Oxide with Nitrogen up to a total pressure of 1 Mpa (10bar) at 50oC  
ethoxyethane (oxirane)  
Hexafluoroacetone hexafluoro-2-propanone  
Hydrogen Bromide (anhydrous anhydrous hydrobromic acid)  
Hydrogen Chloride ( anhydrous hydrochloric acid)  
Hydrogen cyanide  
Hydrogen iodide, anhydrous  
Hydrogen sulphide (dihydrogen sulfide, sulfur hydride)  
Methyl Bromide (halocarbon 40b1)  
Methyl Mercaptan (methanethiol)  
Nitric Oxide and Dinitrogen Tetroxide Mixture (Nitric Oxide and Nitrogen Dioxide Mixture)  
Nitrogen dioxide (nitrogen peroxide)  
Nitrosyl Chloride  
Phosgene carbonyl dichloride (carbon oxychloride, diphosgene)  
Phosphine hydrogen phosphide (phosphorus trihydride)  
Silicon Tetrafluoride, compressed (tetrafluorosilane)  
Sulphur Dioxide bisulfite (sulfurous anhydride, sufurous oxide)  
Sulphuryl fluoride

### **Some examples of UN 6.1, Packing Group 1 Toxic Substances**

Cycloheximide  
Di-isopropylfluorophosphate (DFP)  
Dimethyl fluorophosphate  
Fluoroacetic acid  
Hydrogen cyanide  
Hyoscamine (Duboisine)  
Hydrogen Fluoride  
Arsenic Trichloride  
Isobenzan  
Mercury (II) oxide  
Phosphorus (yellow)  
Potassium Cyanide  
Sodium Cyanide  
Tetraethyl pyrophosphate

Alpha, beta, gamma and delta aminitin  
amanin  
Aconitine  
Colchicine  
Feraconitine  
Physostigmine  
Physostigmine salycylate  
Physostigmine sulfate  
Saxitoxin

Venoms with LD50 (ip or iv) less than 500 µg/kg (all HSNO 6.1A)

Snake (N naja)  
Snake (B asper)  
Snake (H major)  
Seawasp (C fleckeri)  
Ant (P badius)  
Frog (P bicolor)  
Scorpion (C noxious)

Toxins

Abrin (all types)  
Aflatoxins (all types)  
Botulinum toxins (all types)  
Cholera toxin (whole complex or alpha subunits)  
Contoxins  
Ricin (all subunits)  
Saxitoxin  
Shiga toxin  
Shigella shiga neurotoxin  
Staphylococcus aureus toxin SEA  
Staphylococcus aureus toxin SEB  
Staphylococcus aureus toxin SEF  
T-2 toxin  
Tetrodotoxin (and derivatives)