UGDSB Restricted and Banned Chemical List

Adapted from Science Teachers' Association of Ontario document "Safer Use of Chemicals" ISBN 1-894592-25-2

Restricted components (chemicals) are as specified in the Natural Resources Canada's Restricted Components Regulations of the *Explosives Act*

Purchasers of any of these chemicals will be asked to provide the supplier with proper identification (e.g. government issued photo ID) and explain the intended use.

Restricted Component	Hazards	Suitability	Comments
Ammonium Nitrate	Strong oxidizing agent	Restricted	Quantity ordered per year, or on site, not to exceed 1 kg at any time. May self-ignite/detonate when in contact with powdered metals and some organic materials such as urea and acetic acid.
Hydrogen Peroxide, 30% (higher % not permitted)	Corrosive liquid, oxidizing material	Restricted	Quantity ordered per year, or on site, not to exceed 4 L at any time. Avoid contact with a combustible materials, organic materials, metals, acids, alkalis. Do not store above 8°C (**refrigerate**). Store in light-resistant container.
Nitric Acid, 68% or higher	Corrosive liquid, oxidizing material	Restricted	Quantity ordered per year, or on site, not to exceed 1 L at any time. Separate from acids, alkalies, reducing agents and combustibles. Reacts with water to produce heat, and toxic, corrosive fumes of nitrogen oxides. Do not store above 23°C.
Nitromethane	Flammable liquid, flash point=35°C, unstable, toxic	**Banned**	Highly explosive in presence of open flames and sparks, of heat, of oxidizing materials. Safer, more stable alternatives are available.
Potassium Chlorate	Strong oxidizing agent, toxic	Restricted	Quantity ordered per year, or on site, not to exceed 1 kg at any time. Never add water to this compound. Extremely reactive or incompatible with reducing agents, combustible materials, and organic materials. For demonstration purposes by teacher - not for student use.
Potassium Nitrate	Strong oxidizing agent	Restricted	Quantity ordered per year, or on site, not to exceed 1 kg at any time. No contact with easily oxidizable substances, it may react rapidly enough to cause ignition, violent combustion, or explosion. It increases the flammability of any combustible substance. Hygroscopic so keep container tightly closed.

Restricted Component	Hazards	Suitability	Comments
Potassium Perchlorate	Dangerously reactive material, unstable	**Banned**	Keep away from heat, sources of ignition, combustible materials, oxidizing materials, strong bases, direct sunlight or strong incandescent light. Safer, more stable alternatives are available.
Sodium Chlorate	Strong oxidizing agent	Restricted	Quantity ordered per year, or on site, not to exceed 1 kg at any time. May explode from heat or contamination. May react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, oil, clothing). Keep container in a cool, well-ventilated area and separate from acids, alkalies, reducing agents and combustibles. For demonstration purposes by teacher - not for student use.
Sodium Nitrate	Strong oxidizing agent	Restricted	Quantity ordered per year, or on site, not to exceed 1 kg at any time. Keep container tightly closed. Keep container in a cool, well-ventilated area and separate from acids, alkalies, reducing agents and combustibles. Contact with combustible or organic materials may cause fire.
Chemical	**Hazards**	**Suitability**	**Comments**
Acetaldehyde (Ethanal)	Flammable, carcinogen	Banned	Suspected carcinogen. Highly volatile. Dangerous fire and explosion risk. May form explosive levels of peroxides in storage.
Acetamide (Ethanamide)	Toxic, carcinogen, mutagen	Banned	Suspected carcinogen and mutagen.
Acetyl Chloride (Ethanoyl chloride)	Reactive, explosive	Banned	Reacts violently with water producing phosgene gas. Forms an explosive mixture with air.
Acrylamide (Propenamide)	Extremely toxic, carcinogen	Banned	Causes paralysis of central nervous system. For DNA electrophoresis, agarose works in most cases.
Acrylic Acid	Toxic, carcinogen	Banned	Suspected carcinogen. Prone to hazardous polymerization.
Acrylonitrile (Vinyl Cyanide)	Extremely toxic, flammable, carcinogen, mutagen	Banned	Suspected carcinogen and mutagen. Designated substance Reg 490/09

Chemical	Hazards	Suitability	Comments
All metals in powder or dust form	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.
Aluminum, powder	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.
Aluminum Chloride, Anhydrous	Corrosive, reactive, explosive	Banned	Violent reaction with water. Large volumes of toxic HCl gas can be produced.***aluminum chloride hydrates permitted***
Aluminum Dichromate	Extremely toxic, carcinogen	Banned	Carcinogenic by inhalation.
Aluminum Fluoride	Extremely toxic	Banned	Toxic by inhalation or if swallowed.
Aluminum Nitrate, Anhydrous	Oxidizing agent, harmful, irritant, reactive, explosive	Banned	May react violently as a result of shock or friction. ***aluminum nitrate hydrates permitted***
Aluminum Sodium Fluoride (Synthetic Cryolite) see Sodium Aluminum Floride	Extremely toxic	Banned	Poisonous by ingestion. Large doses or overexposure may cause severe nausea, vomiting, diarrhea, abdominal burning and cramp-like pains. Contact with skin and eyes may cause irritation. Inhalation may cause irritation to mucous membranes and respiratory tracts.
Ammonium Chromate	Toxic, harmful, irritant, oxidizing agent	Banned	Moderately toxic by ingestion. Strong irritant.
Ammonium Dichromate	Extremely toxic, oxidizing agent, carcinogen	Banned	Known carcinogen, environmental risk

Chemical	Hazards	Suitability	Comments
Ammonium Fluoride	Corrosive, extremely toxic	Banned	Corrosive to body tissues. Toxic by ingestion and inhalation.
Ammonium Nitrite	Reactive, explosive, oxidizing agent, toxic	Banned	Mutagen, possible teratogen, may be toxic to blood, cardiovascular system, smooth muscle, environmental risk.
Ammonium Perchlorate	Oxidizing agent	Banned	Used in making explosives, pyrotechnic compositions, jet and rocket propellants.
Ammonium Persulfate (Ammonium Peroxydisulfate)	Oxidizing agent, harmful, irritant	Banned	Fire or explosion hazard if mixed with metals, non-metals, cloth, paper or wood. Decomposes slowly and pressure may build up in container.
Aniline (Aminobenzene, Phenylamine)	Extremely toxic, carcinogen	Banned	Possible carcinogen and mutagen, toxic if swallowed or in contact with skin, environmental risk.
Antimony and antimony compounds	Extremely toxic	Banned	Extremely toxic. Some compounds are possible carcinogens, environmental risk.
Aqua Regia (Nitro-hydrochloric acid)	Extremely corrosive, oxidizing agent	Banned	Extremely toxic, may cause burns to skin, lungs upon inhalation. May be fatal if inhaled or ingested.
Arsenic and arsenic compounds	Extremely toxic, carcinogen	Banned	Known carcinogen. Designated substance Reg 490/09
Asbestos - all forms (including ascarite)	Toxic, carcinogen	Banned	Known carcinogen. Designated substance Reg 490/09
Atropine Sulfate	Extremely toxic	Banned	The substance is toxic to lungs, the nervous system, mucous membranes.
Azides - all forms	Extremely toxic, reactive, explosive	Banned	Substances decompose explosively on heating, shock, or friction.

Chemical	Hazards	Suitability	Comments
Barium metal	Flammable, irritant	Banned	In contact with water releases flammable gases. Contact with skin and eyes may cause irritation. Inhalation may cause irritation to mucous membranes and respiratory tract.
Barium Chlorate	Oxidizing agent	Banned	Strong oxidizing agent. Fire risk in the presence of organic material.
Barium Chromate	Toxic, carcinogen	Banned	Carcinogenic by inhalation. If a precipitate is formed in a reaction it should not be isolated and dried.
Barium Cyanide	Extremely Toxic	Banned	Extremely toxic.
Barium Dioxide		Banned	See **Barium Peroxide**
Barium Fluoride	Toxic	Banned	Hazardous if ingested or inhalated. Contact with skin and eyes may cause irritation. Inhalation may cause irritation to mucous membranes and respiratory tract.
Barium Oxide	Toxic, corrosive	Banned	Hazardous if ingested or inhalated. Contact with skin and eyes may cause irritation. Inhalation may cause irritation to mucous membranes and respiratory tract.
Barium Perchlorate	Oxidizing agent, toxic	Banned	Strong oxidizing agent. May explode with friction.
Barium Peroxide (Barium Dioxide)	Oxidizing agent, harmful, irritant	Banned	Reacts vigorously with water to give a corrosive solution. The reaction with metal powders and organic compounds is explosive.
Benzene	Flammable, toxic, carcinogen	Banned	Known carcinogen. Designated substance Reg 490/09
Benzoyl Peroxide	Flammable, harmful, irritant	Banned	Both flammable and explosive. May explode spontaneously upon heating or friction or when dry. Reacts violently with strong bases. Irritates eyes, skin and respiratory tract.
Beryllium and beryllium compounds	Extremely toxic, carcinogen	Banned	Extremely toxic. Suspected carcinogen, environmental risk.
Bismuth, powder	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.

Chemical	Hazards	Suitability	Comments
Bromine, liquid	Extremely toxic, oxidizing agent, reactive, explosive, corrosive	Banned	Very hazardous substance. Highly toxic. Extremely corrosive.
Bromoethane		Banned	See **Ethyl Bromide**
Cadmium and cadmium compounds	Toxic, carcinogen	Banned	Most are either known or suspected carcinogens. Environmental risk.
Carbolic Acid		Banned	See **Phenol**
Carbon Disulfide	Flammable, toxic, carcinogen	Banned	Dangerous fire and explosion risk. Suspected carcinogen
Carbon Tetrachloride (Tetrachloromethane)	Carcinogen, toxic,	Banned	Suspected carcinogen. Environmental risk
Carnoy's Solution, fixative	Toxic, flammable	Banned	Contains chloroform, a suspected carcinogen.
Chloramphenicol	Toxic, carcinogen	Banned	Suspected carcinogen.
Chlorine Gas cylinder	Extremely toxic	Banned	Extremely toxic.
Chloroform (Trichloromethane)	Toxic, carcinogen	Banned	Suspected carcinogen
Chloroethene	Flammable, toxic	Banned	See **Vinyl Chloride.** Designated substance Reg 490/09
Chromic Acid, cleaning mixture	Oxidizing agent, toxic, corrosive, carcinogen	Banned	This mixture of concentrated sulfuric acid and potassium dichromate, which has been traditionally used for cleaning glassware, reacts violently with organic compounds. Commercial detergents are much safer. Environmental risk.
Chromium and chromium (VI) compounds	Oxidizing agent, toxic, corrosive, carcinogen	Banned	All are known or suspected carcinogens, MOE substance of concern, environmental risk

Chemical	Hazards	Suitability	Comments
Cobalt Metal, powder	Reactive, explosive, carcinogen	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard. Carcinogen.
Cobalt (II) Carbonate	Harmful, irritant, carcinogen	Banned	Possible carcinogen. Environmental risk
Cobalt (II) and (III) Oxide	Harmful, irritant, carcinogen	Banned	Possible carcinogen.
Colchicine	Extremely toxic, mutagen	Banned	Extremely toxic. Possible mutagen.
Collodion	Flammable, harmful, irritant	Banned	Dangerous fire risk. Body tissue irritant.
Congo Red	Carcinogen, mutagen	Banned	Possible carcinogen and mutagen.
Copper, powder	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.
Cryolite		Banned	See **Sodium Aluminum Fluoride**
Cyanides, in general (but not ferro or ferri)	Extremely toxic	Banned	Extremely toxic.
DDT	Toxic, carcinogen	Banned	Suspected carcinogen. Environmental risk
1,2-Dibromoethane (Ethylene Dibromide)	Toxic, carcinogen	Banned	Suspected carcinogen. Environmental risk
1,2-Dichloroethane (Ethylene Dichloride)	Flammable, toxic, carcinogen	Banned	Suspected carcinogen.
Dichlorobenzidine	Toxic, carcinogen	Banned	Suspected carcinogen. Environmental risk
Dichloromethane (Methylene Dichloride)	Harmful, irritant, carcinogen	Banned	Possible carcinogen. Narcotic in high concentrations. Very volatile.

Chemical	Hazards	Suitability	Comments
Diethyl Ether (Ethyl Ether/Ethoxyethane)	Flammable, harmful, irritant	Banned	Dangerous fire and explosion risk. Causes respiratory paralysis.
Diethyl Phthalate	Harmful, irritant, teratogen	Banned	Possible teratogen.
Dimethyl Sulfate	Extremely toxic, carcinogen	Banned	Suspected carcinogen.
Dimethyl Sulfoxide	Mutagen	Banned	Readily penetrates the body through the skin and all organs. Mutagenic.
Dinitrophenol	Extremely toxic	Banned	Readily absorbed through skin.
2,4-Dinitrophenylhydrazine	Extremely toxic	Banned	Extremely toxic.
1,4-Dioxane (Diethylene Oxide)	Flammable, carcinogen	Banned	Possible carcinogen. Forms explosive peroxides. MOE identified environmental concern.
Ethanal		Banned	See **Acetaldehyde**
Ethanamide		Banned	See **Acetamide**
Ethyl Bromide (Bromoethane)	Flammable, harmful, irritant, carcinogen	Banned	Possible carcinogen.
Ethyl Carbonate	Flammable, carcinogen	Banned	Possible carcinogen.
Ethyl Chloride (Chloroethane)	Flammable, harmful, irritant, carcinogen	Banned	Possible carcinogen.
Ethylene Dibromide		Banned	See **1,2-Dibromoethane**
Ethylene Dichloride		Banned	See **1,2-Dichloroethane**
Ethylene Oxide Gas cylinder	Flammable, compressed gas, carcinogen, mutagen	Banned	Designated substance Reg 490/09

Chemical	Hazards	Suitability	Comments
Ethylene Trichloride		Banned	See **Trichloroethylene**
Ethyl Ether		Banned	See **Diethyl Ether**
Ethyl Iodide (Iodoethane)	Flammable, harmful, irritant, carcinogen	Banned	Suspected carcinogen. Sensitive to light.
FAA Solution	Flammable, toxic	Banned	Contains formaldehyde a suspected carcinogen.
Fluorine Gas cylinder	Extremely toxic, corrosive, compressed gas	Banned	May be fatal if inhaled. Causes severe respiratory, skin and eye burns.
Formaldehyde, 37-41% Solution (Methanal)	Toxic, carcinogen	Banned	Suspected carcinogen. Strong irritant. Toxic by ingestion, inhalation and skin absorption.
Formalin, 10% Formaldehyde Solution	Harmful, irritant, carcinogen	Banned	Suspected carcinogen. Strong irritant. Toxic by ingestion, inhalation and skin absorption.
Gallic Acid	Harmful, irritant, teratogen	Banned	Possible teratogen.
Gluconic Acid	Extremely toxic	Banned	Inhalation may be fatal.
Hydrazine	Toxic, flammable, carcinogen	Banned	Suspected carcinogen. Environmental risk.
Hydrofluoric Acid	Extremely corrosive	Banned	Extremely corrosive.
Hydrogen Sulfide Gas cylinder	Flammable, extremely toxic, compressed gas	Banned	Offensive stench, toxic by inhalation, environmental risk.

Chemical	Hazards	Suitability	Comments
Hydroquinone (Benzene-1,4-Diol)	Toxic, irritant	Banned	Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Possible carcinogen and mutagen. Environmental risk.
Iron Metal, powder	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard. **iron filings permitted**
Isocyanates	Harmful, irritant	Banned	Designated substance Reg 490/09 - permitted purchase/use determined by the board
Lead Metal	Extremely toxic, carcinogen	Banned	Lead as a powder is extremely toxic by inhalation and ingestion. Possible carcinogen as a fume or dust. Environmental risk. Designated substance Reg 490/09. ** A small amount of elemental lead is permitted as part of the teaching materials related to radioactivity.**
Lead (II) Chromate	Toxic, carcinogen	Banned	Suspected carcinogen. Environmental risk.
Magnesium Metal, powder	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.
Manganese Metal, powder	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.
Mercury and mercury compounds	Extremely toxic	Banned	Highly toxic. Environmental risk. Mercury is a designated substance Reg 490/09
Methanal		Banned	See **Formaldehyde**
Methylbenzene		Banned	See **Toluene**
Methylene Chloride		Banned	See **Dichloromethane**
Millon's Reagent	Extremely toxic, corrosive,	Banned	A solution of mercury (II) nitrate in concentrated nitric acid. Environmental risk. Use less hazardous alternatives for protein determination e.g., Albustix, Sakaguchi test or Cole's modification of Millon's reagent.
Nickel Metal, powder/dust	Reactive, irritant, carcinogen	Banned	Dust is flammable. It is a carcinogen by inhalation; also a sensitizer, causing nickel rash.
Nickel (II) Oxide	Toxic, carcinogen	Banned	Known carcinogen. Environmental risk.
Nitrocellulose	Reactive, explosive	Banned	Explosion risk.

Chemical	Hazards	Suitability	Comments
Nitrogen Dioxide Gas cylinder	Extremely toxic, compressed gas	Banned	Very toxic by inhalation and severe irritant to respiratory system, eyes and skin.
Pentane	Flammable, harmful, irritant	Banned	Narcotic in high concentrations. Environmental risk. Use hexane or heptane as a safer alternative.
Perchloric Acid	Oxidizing agent, corrosive	Banned	Extreme explosion hazard.
Perchloroethylene		Banned	See **Tetrachloroethylene**
Phenol (Carbolic acid)	Toxic, harmful, irritant	Banned	Very toxic by skin absorption. Strong skin irritant.
Phosphorus Pentoxide (Phosphorus (V) Oxide)	Corrosive	Banned	Severely corrosive substance.
Picric Acid (2,4,6- Trinitrophenol)	Reactive, explosive	Banned	Explosion risk.
Potassium Cyanide	Extremely toxic, corrosive	Banned	Very hazardous in case of skin contact (permeator), of ingestion, of inhalation. Hazardous in case of skin contact (irritant), of eye contact (irritant). Corrosive to eyes and skin. Oral LD50: Acute: 5 mg/kg. Environmental risk.
Propenamide		Banned	See **Acrylamide**
Pyridine	Flammable, harmful, irritant	Banned	Flammable liquid, toxic - oral, dermal, ingestion.
Radioactive elements and compounts	Toxic, radioactive	Banned	Radioactive elements and compounds are very toxic. Radioactive substances used for teaching purposes are permitted.
Semicarbazide Hydrochloride	Extremely toxic	Banned	Extremely toxic; may be fatal if swallowed. Readily absorbed through skin.
Silica		Banned	Designated substance Reg 490/09 - permitted purchase/use determined by the board
Sodium Aluminum Fluoride (Cryolite)		Banned	**See Aluminum Sodium Fluoride**

Chemical	Hazards	Suitability	Comments
Sodium Arsenite	Extremely toxic, carcinogen, mutagen	Banned	Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of inhalation. Carcinogen and mutagen.
Sodium Azide (Sodium Trinitride)	Extremely toxic, reactive, explosive	Banned	Extremely toxic. Substances decompose explosively on heating, shock, concussion or friction.
Sodium Cyanide	Extremely toxic	Banned	Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (permeator). Corrosive to eyes and skin. ORAL LD50: 6.44 mg/kg.
Sodium Trinitride		Banned	See **Sodium Azide**
Sulfur Dichloride Oxide		Banned	See **Thionyl Chloride**
Sulfur Dioxide Gas cylinder	Toxic, harmful, irritant	Banned	Intensely irritating to the eyes and respiratory tract.
Sulfurous Acid	Toxic, corrosive, mutagen	Banned	Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion. Mutagenic.
Tetrachloroethylene (Tetrachloroethene/Perchloroethylene)	Harmful, irritant, carcinogen	Banned	Possible carcinogen. MOE identified environmental concern.
Tetrachloromethane		Banned	See **Carbon Tetrachloride**
Thiocarbamide		Banned	See **Thiourea**
Thionyl Chloride (Sulfur Dichloride Oxide)	Corrosive, extremely toxic	Banned	Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
Thiourea	Extremely toxic, carcinogen	Banned	Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Environmental risk.
Thorium and thorium compounds	Toxic, radioactive	Banned	The metal is radioactive and very toxic. Radioactive substances used for teaching purposes are permitted.
Tin, powder	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.

Chemical	Hazards	Suitability	Comments
Toluene (Methylbenzene)	Flammable, harmful, irritant	Banned	Poisonous by skin absorption. Chronic effects include anemia and dermatitis.
1,1,1-Trichloroethane (Methyl Chloroform)	Toxic	Banned	Damages the ozone layer. Environmental risk.
Trichlorethylene (Trichloroethene/Ethylene Trichloride)	Toxic, carcinogen	Banned	Suspected carcinogen. MOE identified environmental concern.
Trichloromethane		Banned	See **Chloroform**
2,4,5-Trichlorophenoxyacetic Acid	Harmful, irritant, carcinogen, mutagen	Banned	Herbicide. Possible carcinogen and mutagen.
1,1,2-Trichloro Trifluoroethane (TTFE)	Toxic	Banned	Damages the ozone layer. Environmental risk.
Trifluoroacetic acid	Extremely Corrosive	Banned	Extremely hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
Uranium and uranium compounds	Extremely toxic, radioactive	Banned	The metal is radioactive and very toxic, especially by inhalation of dust. Radioactive substances used for teaching purposes are permitted.
Vanadium Pentoxide	Toxic, teratogen, mutagen,	Banned	Suspected teratogen and mutagen.
Vinyl Chloride monomer (Chloroethene)	Flammable, toxic	Banned	Designated substance Reg 490/09. MOE identified environmental concern.
Xylidene	Toxic, carcinogen	Banned	Used in the preparation of dyes.
Zinc, dust	Reactive, explosive, irritant	Banned	Fine metal powders may form an explosive mixture with air. May be ignited by friction, heat, sparks or flames. Inhalation hazard.
Zinc Chromate	Toxic, carcinogen	Banned	Known carcinogen. Environmental risk.

UGDSB Restricted and Banned Chemical List Hazard Identification Legend

GHS Pictogram	Hazard Classification	Explanation
none	Biohazardous	A substance that contains bacteria or viruses that can cause disease in humans
	Compressed Gas	A substance under high pressure contained in a cylinder which may explode or burst when heated, dropped or damaged.
	Carcinogen	A substance that may cause cancer, if breathed in, swallowed or absorbed via the skin.
	Corrosive	A substance that may destroy living tissue on contact, causing burns. Materials causing burns when in contact with skin for three minutes or less are classified as **extremely corrosive**.
		Materials causing burns when in contact with skin for a more prolonged period are classified as **corrosive**.
	Dangerous for the environment	Substances that are toxic to aquatic and/ or non-aquatic organisms and may cause long-term adverse effects to the environment.
	Dangerously reactive	Substances which may react violently causing explosion, fire or release of toxic gases when exposed to light, heat, vibration or extreme temperatures.
	Flammable	A substance is classified as **extremely flammable** if it has a flash point lower than 22.8C and a boiling point lower than 37.8C.
		It is classified as **highly flammable** if it has a flash point below 22.8C and a boiling point at or above 37.8C.
		It is classified as **flammable** if it has a flash point below 37.8C.
	Harmful Irritant	A substance similar to a toxic one but with less severe health risks OR a substance (including a dust) that behaves in a similar way to corrosives but, instead of destroying living tissue, causes significant inflammation (reddening) through immediate, prolonged or repeated contact with the skin or a mucous membrane (e.g., eyes, lungs, etc).
	Mutagenic	A substance that can cause mutations in the genetic material of a cell exposed to it.

GHS Pictogram	Hazard Classification	Explanation
	Oxidizing agent	A substance that may give rise to a vigorous reaction or explosion when in contact with combustible or flammable substances.
	Teratogen	A substance that can cause defects in the offspring (usually via the placenta after absorption by the mother during pregnancy).
	Toxic	A substance that in very small quantities may cause death or damage to health when breathed in, swallowed or absorbed via the skin. A substance is classified as **extremely toxic** if a single exposure to the substance may be fatal or cause serious or permanent toxic effects.
		It is classified as **toxic** if repeated exposure is needed to cause permanent damage to health.