AN ROINN OIDEACHAIS AGUS EOLAÍOCHTA | DEPARTMENT OF EDUCATION AND SCIENCE

Safety in the School Laboratory

DISPOSAL OF CHEMICALS

An Roinn Oideachais agus Eolaíochta

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Prologue

Under the 1989 Safety Health and Welfare at Work Act and the 1994 Chemical Agents Regulations made under that Act, it is incumbent on all chemical users to hold an up to date chemical safety data sheet on all chemicals held in stock. Teachers, Unions, Parents Groups and Boards of Management have reported difficulty in obtaining chemical safety data sheets from their chemical suppliers for the full range of chemicals held in their school laboratory. In addition, they have also complained that the chemical safety data sheets which are available were written with the large chemical user in mind. The recommendations made in them are not practical or realistic in the school science laboratory where small quantities are the norm. The terms used are inconsistent and the layout is variable making them unnecessarily complex on occasions. A large number of publications also exist in this field which are good but they are not appropriate to the very specific problems which face science staff in schools.

To address this need, to assist school teachers in complying with the law and to comply with the Health and Safety Authority's Dangerous Substance Advisory Committee's Recommendations that chemical users should draw up "user friendly" chemical safety data sheets to meet their own requirements, the Department of Education has commissioned this manual to be an immediate source of reference and guidance. This material has been gathered from practical professional contributors and presented in a style which should be of daily value to the practising teacher. The full range of chemicals used on the Junior and Leaving Certificate syllabus and other common chemicals are included. The Department recommends that chemicals which are not on this list should not be held in the school science laboratory.

The information given here is in compliance with the use of the chemical under foreseeable circumstances when teaching the specific programmes. However, if using the chemical under different conditions or with different materials, you should first consult the full safety data sheet available from your chemical supplier. The EU chemical classification number has been included where applicable to help identify the chemical in the light of new changes which may be introduced.

Every effort has been made to ensure the accuracy of this material when going to press. If you have any doubt about the information you should consult an 'up to date[1]' chemical safety data sheet available from your chemical supplier on the substance.

This manual was commissioned by the Department of Education and Science and has been prepared by Dr. Joe Kearney of Forbairt.

Legal Obligations The Department of Education and Science and the Author of these guidelines will not be held responsible for any loss, damage or injuries arising in the context of the implementation of the recommendations of the guidelines.

[1] 'Up to date' means: that the chemical safety data sheet should have been within the last three years, and should never be more than five years old.

Safety in the School Laboratory

Introduction

The following is a clarification of terms used in the Chemical Safety Data Sheets contained in this manual

Harmful Effects

A comprehensive description of the irritant and toxic effects of the school chemicals named here is not possible. In particular it must be noted that a small number of individuals will react badly to even a low exposure to some chemicals. It is recommended that a protective coat, eye protection and gloves should be worn when hazardous chemicals are handled. The skin may serve as a route of entry for chemicals into the human body.

Care must be taken to ensure that asthma sufferers and those with other respiratory, ocular or skin conditions are not exposed to chemicals, vapours and fumes as they may be adversely affected at low levels of exposure.

The wearing of contact lens in a laboratory environment is not recommended as the danger to eyes is enhanced if chemical contact occurs. For eye contamination by a chemical, first aid washing is the vital step in limiting the injury done. It must be emphasised that the eye **CANNOT** be subjected to any pressure from a water jet.

Serious injury could result. Wash the eye by allowing water to flow gently over the eye. Continue washing for 15 minutes. Insist on continuous washing as the chemical is being diluted not displaced. Always seek medical assistance after eye contact with a chemical.

The absence of a sterile eyewash is of no great significance. Eye infection where it arises is normally easily controlled by pharmaceuticals. The serious burn of acid, caustic or other chemical is much more difficult to remedy.

For skin contact, remove all contaminated clothing and wash skin continuously for 10 minutes. Contaminated clothing should be washed before reuse. Badly contaminated clothing should be discarded. A simple length of rubber tubing connected to a water tap will serve as a washing facility for eyes and skin.

Dangerous Reactions With:

The better known dangerous combinations are described but this list is not comprehensive. In particular the use of uncleaned or inadequately cleaned glassware may present special hazard.

All glassware should be examined before use for star cracks (star shaped stress cracks). While glass has many excellent features in respect of chemicals, the sudden collapse of a glass vessel may occur if a crack is present or if it is subjected to pressure or a localised hot spot occurs (i.e. sodium in water adheres to wall of vessel).

Provision should be made for fire fighting by the use of a fire extinguisher or a fire blanket and by locating a sand bucket nearby. Care should be taken to ensure an emergency evacuation procedure is in place.

Disposal:

The information given under this heading relates to small quantities and represents the practice in many countries. However, your local authority may have special requirements.

It should normally not be necessary to consider disposal of a stable chemical such as sodium carbonate even if it is 10 years old. Most inorganic chemicals have an indefinite shelf life. It is important that the date of receipt is labelled on all chemicals so that they can be used in rotation.

Water soluble solvents are easily diluted and washed to the foul water drain. Water insoluble solvents may be emulsified with washing up liquid and flushed to the foul water drain. Alternatively many water insoluble solvents may be evaporated in a fume cupboard or in a safe supervised area outdoors.

Large quantities and serious ecological hazards such as mercury/lead compounds should be stored for collection by a licensed EPA Approved Chemical Waste Disposal Contractor.

Spillages:

An absorbent medium such as a bucket of dry sand should be kept close to hand to soak up spillage. If a vapour or gas arises all windows and doors should be opened to boost ventilation. If flammable vapour or gas is involved take care to shut down all ignition sources. Allow vapour or gas to dissipate before mopping up.

If a flammable spillage has taken place ensure the clean up tools used are non-sparking e.g. a plastic shovel. The procedure described under disposal may be followed for most spillages that might arise.

Swallowed:

The basic first aid described under this heading applies to accidental low dose exposure by swallowing. Parents and teachers should not be unduly alarmed if a student has swallowed a chemical where it is recommended to "Seek medical assistance". This is because many of these substances can act as laxatives or could cause excessive dehydration in some persons if substantial quantities are taken. Where a large quantity or a high concentration is involved a hazard of perforation of the internal tissue could arise. Drinking water under such conditions would exacerbate the injury.

The National Poisons Information Centre Beaumont Hospital, telephone (01) 8379964, 8379966 provides a 24 hour information service. This service is intended for the use of medical staff. However, circumstances may arise where the advice of this centre is required immediately.

The hazard symbols used throughout refer to the classification of chemicals in accordance with S.I. 77 of 1994, European Communities (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations, 1994.

The symbols and phrases used have the meaning described in the regulations. However, the absence of a symbol or a phrase must not be taken to imply a low hazard or absence of a hazard.

Risk Phrases

1	Explosive when dry
2	Risk of explosion by shock, friction, fire or other sources of ignition
3	Extreme risk of explosion by shock, friction, fire or other sources of ignition
4	Forms very sensitive explosive metallic compounds
5	Heating may cause explosion
6	Explosive with or without contact with air
7	May cause fire
8	Contact with combustible material may cause fire
9	Explosive when mixed with combustible material
10	Flammable
11	Highly flammable
12	Extremely flammable
14	Reacts violently with water
15	Contact with water liberates extremely flammable gases
16	Explosive when mixed with oxidising substances
17	Spontaneously flammable in air
18	In use may form flammable/explosive vapour-air mixture
19	May form explosive peroxides
20	Harmful by inhalation
21	Harmful in contact with skin
22	Harmful if swallowed
23	Toxic by inhalation
24	Toxic in contact with skin
25	Toxic if swallowed
26	Very toxic by inhalation
27	Very toxic in contact with skin
28	Very toxic if swallowed
29	Contact with water liberates toxic gas
30	Can become highly flammable in use
31	Contact with acids liberates toxic gas
32	Contact with acids liberates very toxic gas

33	Danger of cumulative effects
34	Causes burns
35	Causes severe burns
36	Irritating to the eyes
37	Irritating to the respiratory system
38	Irritating to the skin
39	Danger of very serious irreversible effects
40	Possible risk of irreversible effects
41	Risk of serious damage to eyes
42	May cause sensitisation by inhalation
43	May cause sensitisation by skin contact
44	Risk of explosion if heated under confinement
45	May cause cancer
46	May cause heritable genetic damage
48	Danger of serious damage to health by prolonged exposure
49	May cause cancer by inhalation
50	Very toxic to aquatic organisms
51	Toxic to aquatic organisms
52	Harmful to aquatic organisms
53	May cause long term adverse effects in the aquatic environment
54	Toxic to flora
55	Toxic to fauna
56	Toxic to soil organisms
57	Toxic to bees
58	May cause long term adverse effects in the environment
59	Dangerous for the ozone layer
60	May impair fertility
61	May cause harm to the unborn child
62	Possible risk of impaired fertility
63	Possible risk of harm to the unborn child
64	May cause harm to breast fed babies

Combination of Risk Phrases

14/15	Reacts violently with water, liberating extremely flammable gases
15/29	Contact with water liberates toxic, extremely flammable gas
20/21	Harmful by inhalation and in contact with skin
20/21/22	Harmful by inhalation, in contact with skin and if swallowed
20/22	Harmful by inhalation and if swallowed
21/22	Harmful in contact with skin and if swallowed
23/24	Toxic by inhalation and in contact with skin
23/24/25	Toxic by inhalation, in contact with skin and if swallowed
23/25	Toxic by inhalation and if swallowed
24/25	Toxic in contact with skin and if swallowed
26/27	Very toxic by inhalation and in contact with skin
26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
26/28	Very toxic by inhalation and if swallowed
27/28	Very toxic in contact with skin and if swallowed
36/37	Irritating to eyes and respiratory system
36/37/38	Irritating to eyes, respiratory system and skin
36/38	Irritating to eyes and skin
37/38	Irritating to respiratory system and skin
39/23	Toxic: danger of very serious irreversible effects through inhalation
39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed
39/24	Toxic: danger of very serious irreversible effects in contact with skin
39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
39/25	Toxic: danger of very serious irreversible effects if swallowed
39/26	Very toxic: danger of very serious irreversible effects through inhalation
39/26/27	Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin
39/26/27/28	Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
39/26/28	Very toxic: danger of very serious irreversible effects through inhalation and if swallowed
39/27	Very toxic: danger of very serious irreversible effects in contact with skin
39/27/28	Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed

39/28	Very toxic: danger of very serious irreversible effects if swallowed
40/20	Harmful: possible risk of irreversible effects through inhalation
40/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin
40/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed
40/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed
40/22	Harmful: possible risk of irreversible effects if swallowed
40/21	Harmful: possible risk of irreversible effects in contact with skin
40/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed
42/43	May cause sensitisation by inhalation and skin contact
48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin
48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin
48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed

50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety Phrases

1	Keep locked up
2	Keep out of reach of children
3	Keep in a cool place
4	Keep away from living quarters
5	Keep contents under…….(appropriate liquid to be specified by the manufacturer)
6	Keep under…….(inert gas to be specified by the manufacturer)
7	Keep container tightly closed
8	Keep container dry
9	Keep container in a well ventilated place
12	Do not keep the container sealed
13	Keep away from food, drink and animal feeding stuffs
14	Keep away from…….(incompatible materials to be indicated by the manufacturer
15	Keep away from heat
16	Keep away from sources of ignition - No smoking
17	Keep away from combustible material
18	Handle and open container with care
20	When using do not eat or drink
21	When using do not smoke
22	Do not breathe dust
23	Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer
24	Avoid contact with the skin
25	Avoid contact with the eyes
26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
27	Take off immediately all contaminated clothing
28	After contact with skin, wash immediately with plenty of……(to be specified by the manufacturer)
29	Do not empty into drains

30	Never add water to this product
33	Take precautionary measures against static discharges
34	Avoid shock and friction.
35	This material and it's container must be disposed of in a safe way
36	Wear suitable protective clothing
37	Wear suitable gloves
38	In case of insufficient ventilation, wear suitable respiratory equipment
39	Wear eye/face protection
40	To clean the floor and all object contaminated by this material use ……(to be specified by the manufacturer)
41	In case of fire and/or explosion do not breathe fumes
42	During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified)
43	In case of fire, use ……. (indicate in the space the precise type of fire fighting equipment. If water increases the risk add - Never use water)
45	In case of accident or if you feel unwell, seek medical advice immediately (show label where possible)
46	If swallowed seek medical advice immediately and show this container or label
47	Keep at temperature not exceeding …….^{o}C((to be specified by the manufacturer)
48	Keep wetted with ……. (appropriate material to be specified by the manufacturer)
49	Keep only in the original container
50	Do not mix with ……. (to be specified by the manufacturer)
51	Use only in well ventilated areas
52	Not recommended for interior use on large surface areas
53	Avoid exposure - obtain special instruction before use
56	Dispose of this material and its container to hazardous or special waste collection point
57	Use appropriate containment to avoid environmental contamination
59	Refer to manufacturer/supplier for information on recovery/recycling
60	This material and/or it's container must be disposed of as hazardous waste

61	Avoid release to the environment. Refer to special instructions/Safety data sheet
62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

Combination of Safety Phrases

1/2	Keep locked up and out of the reach of children
3/9/14	Keep in a cool well ventilated place away from ……. (incompatible materials to be indicated by manufacturer)
3/9/14/49	Keep only in the original container in a cool well ventilated place away from (incompatible materials to be indicated by the manufacturer)
3/9/49	Keep only in the original container in a cool well ventilated place
3/14	Keep in a cool place away from …… (incompatible materials to be indicated by the manufacturer)
3/7	Keep container tightly closed in a cool place
7/8	Keep container tightly closed and dry
7/9	Keep container tightly closed and in a well ventilated place
7/47	Keep container tightly closed and at a temperature not exceeding …… ^{o}C (to be specified by manufacturer)
20/21	When using do not eat, drink or smoke
24/25	Avoid contact with skin and eyes
29/56	Do not empty into drains, dispose of this material and its container to hazardous or special waste collection point
36/37	Wear suitable protective clothing and gloves
36/37/39	Wear suitable protective clothing, gloves and eye/face protection
36/39	Wear suitable protective clothing and eye/face protection
37/39	Wear suitable gloves and eye/face protection
47/49	Keep only in the original container at temperature not exceeding ……^{o}C (to be specified by manufacturer)

AGAR NUTRIENT NO. 3 POWDER AND AGAR TABLETS

Harmful Effects:

Non hazardous in unused state.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes.

Skin contact: Wash with water for 2 minutes.

Disposal: If micro-organisms have been cultivated the material presents a biohazard and should be autoclaved before disposal. Otherwise mix with excess sand and place in refuse bin.

ALUMINIUM AMMONIUM SULFATE

Harmful Effects:

Harmful if ingested in quantity. May be an irritant. Toxic fumes of oxides of sulfur released upon decomposition.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve in large volume of water and flush to foul water drain.

EEC. NO. 235-186-4

ALUMINIUM CHLORIDE

Harmful Effects:

Severe eye hazard, burns skin, reacts with moisture to release hydrogen chloride gas. Take care when opening container. Pressure may have built up due to reaction with moisture.

Dangerous Reaction with:

Water, reaction is vigorous with acid gas, hydrogen chloride released. Keep container dry and tightly closed.

Corrosive

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash skin for 10 mins. If clothes are contaminated remove immediately because of fire hazard.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Wear eye protection and gloves. Use a fume cupboard if available. If not, open windows to boost ventilation and wear an acid gas respirator. Add slowly to large volume of water with stirring. Flush down foul drain with excess water.

EC NO: 215-691-6

ALUMINIUM OXIDE

Harmful Effects:

Non hazardous unless large quantities are ingested.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash skin with water for 2 mins.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Mix with excess sand in ratio of 6:1 and dispose in refuse bin.

EC NO: 231-072-3

ALUMINIUM POWDER

Highly flammable

Harmful Effects:

Hydrogen is evolved upon contact with water. Aluminium powder burns vigorously. Use sand to extinguish.

Dangerous Reaction with:

Oxidising agents. Chlorates, nitrates, metal oxides; organohalogen compounds such as 1,1,1-trichloroethane with strong acids and alkali hydrogen is evolved. Mercury/mercury compounds react violently, sulfur will react explosively. Alcohols will react violently after long induction period.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Wash skin with water for 10 mins.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Mix with excess sand in proportions 6:1 and dispose in refuse bin.

EC NO: 233-135-0

ALUMINIUM SULFATE

Harmful Effects:

Ingestion of large amounts may cause nausea, convulsions. Irritant to eyes. Toxic fumes of oxides of sulfate released upon decomposition.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 2 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve (100 g) in 5 litres water and flush to foul water drain.

AMINO ACIDS

Harmful Effects

May irritate skin.

DANGEROUS REACTION WITH: Oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes, seek medical assistance.

Skin Contact: Wash with water for 2 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add small quantities (10 g) to water (5 litres) and flush to foul water drain.

EEC. NO. 215-647-6

AMMONIA SOLUTION

Corrosive

Dangerous to the environment

Harmful Effects:

Concentrated solution (greater than 6 M) will cause burns. Less than 6 M solutions are irritant. The ammonia vapour is toxic and very irritating to the lungs.

Dangerous Reaction with:

Silver salts, mercury, oxygen, chlorine, bromine, iodine as explosions may occur. Upon standing, pressure within an ammonia bottle may build up. Exercise caution when opening a bottle. Wear safety goggles and gloves and if possible open behind protective shield.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Remove contaminated clothing. Wash with water for 10 minutes and if blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. Rest and keep warm, if symptoms persist, seek medical assistance.

Swallowed: Wash out mouth and drink 500 cm^3 of water. Do not induce vomiting. Seek medical assistance.

Disposal: Dilute with excess water in proportion 20:1. Add an equal volume of 1.0M Hydrochloric acid and wash mixture down the foul water drain with a large quantity of water.

EEC. NO. 235-186-4

AMMONIUM CHLORIDE

Harmful

Harmful Effects:

Harmful if ingested, severe eye irritant. Toxic fumes of ammonia and hydrogen chloride released upon decomposition.

Dangerous Reaction with:

Explosive reaction with potassium chlorate, ignition with ammonium nitrate and bromine pentafluoride.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Wear eye protection and gloves. Small quantities (50 g) may be dissolved and washed to the foul water drain with a large volume of water.

EEC. NO. 211-162-9

AMMONIUM ETHANOATE (AMMONIUM ACETATE)

Harmful Effects:

Harmful if ingested, eye irritant. Toxic fumes of ammonia and oxides of nitrogen released upon decomposition.

Dangerous Reaction with:

Oxidisers, bases.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Wash with water for 2 minutes and if blisters occur, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve a small quantity (50 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 214-202-3

AMMONIUM ETHANDIOATE (AMMONIUM OXALATE)

Harmful Effects:

Harmful by ingestion and by skin contact. A strong irritant causing burns. Toxic fumes of ammonia and oxides released upon decomposition.

Harmful

Dangerous Reaction with:

Oxidising agents as violent reactions may occur.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur. Seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (50 g) in water (10 litres) and flush to foul water drain.

EEC. NO. 231-987-8

di-AMMONIUM HYDROGEN ORTHOPHOSPATE

Harmful Effects:

Low to moderate toxicity, eye irritant. Toxic fumes of ammonia and oxides of nitrogen and phosphorus released upon decomposition.

Dangerous Reaction with:

Ammonium salts must not be mixed or ground with potassium chlorate or manganate as explosive mixtures may be formed.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve a small quantity (50 g) in water and wash to foul water drain with a large volume of water.

EEC. NO. 233-151-8

AMMONIUM IRON(II) SULFATE

Harmful Effects:

Harmful if ingested in quantity. Eye irritant. Toxic fumes of ammonia and oxides of nitrogen and sulfur released.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Wash with water for 2 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Small quantities (50 g) may be dissolved in water and flushed to the foul water drain with a large volume of water.

EEC. NO. 233-382-4

AMMONIUM IRON(III) SULFATE

Harmful Effects:

Harmful if ingested. Eye irritant. Toxic fumes of ammonia and oxides of nitrogen and sulfur released upon decomposition.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash with water for 2 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Small quantities (50 g) may be dissolved in water and flushed to the foul water drain with a large volume of water.

EEC. NO. 234-722-4

AMMONIUM MOLYBDATE SOLUTION

Harmful Effects:

Harmful by ingestion in large quantities. Irritant to eyes and skin. Toxic fumes of ammonia and oxides of nitrogen released upon decomposition.

Dangerous Reaction with:

Bases.

Harmful

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dilute a small quantity (50 cm^3) in water (5 litres) and flush to foul water drain.

EEC. NO. 229-347-8

AMMONIUM NITRATE

Oxidising

Harmful Effects:

If heated an explosion may occur, especially if contaminated. Contact with combustible material may cause fire. Toxic fumes of ammonia and nitrogen oxides fumes may be released in a fire.

Dangerous Reaction with:

Sodium, potassium, aluminium, magnesium, carbon, sulfur, phosphorus. Touch sensitive explosives may form. With potassium manganate(VII) a delayed explosion will occur. Explosive mixtures are formed with ethanoic acid and organic compounds. Ammonium nitrate should not be ground or allowed become contaminated with organic matter.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Remove contaminated clothing. Wash with water for 10 minutes and if blisters occur, seek medical attention.
Inhalation:	Remove to fresh air, if symptoms persist, seek medical assistance.
Swallowed:	Wash out mouth and drink 500 cm^3 of water. Do not induce vomiting. Seek medical assistance.
Disposal:	Dissolve in excess water (100 g ammonium nitrate in 10 litres of water) and flush to foul water drain in a large volume of water.

EEC. NO. 231-984-1

AMMONIUM SULFATE

Harmful Effects:

Harmful if ingested in quantity. Toxic fumes of ammonia and oxides of sulfur released upon decomposition.

Dangerous Reaction with:

Ammonium salts must not be mixed or ground with potassium chlorate or manganate as explosive mixtures may be formed.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash with water for 2 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Small quantities (50 g) may be washed to the foul water drain with a large volume of water.

AMMONIUM SULFIDE

Corrosive

Harmful Effects

Solutions of ammonium sulfide may release poisonous fumes of hydrogen sulfide when in contact with zinc or acids. Upon contact burns occur to eyes and skin. Toxic by all routes.

Dangerous Reaction with:

Acids, zinc. Do not grind or mix with potassium chlorate or manganate as explosive mixtures may form.

Dangerous to the environment

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Remove contaminated clothing. Wash with water for 10 minutes.

Fume Inhalation: Remove to fresh air, if symptoms persist, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Small quantities (100 g) may be dissolved in water (10 litres) and flushed to the foul water drain.

EEC. NO. 217-175-6

AMMONIUM THIOCYANATE

Harmful

Harmful Effects:

Harmful by ingestion, inhalation or skin contact. Health effects include hallucination, behavioural disorders, nausea or vomiting.

Dangerous Reaction with:

Conc. acid or hot dilute acid - a toxic gas, carbonyl sulfide is released. Incompatible with potassium chlorate or lead nitrate.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (100 g) in water (10 litres) and flush to foul water drain with large volume of water.

EEC. NO. 233-788-1

BARIUM CHLORIDE

Harmful

Harmful Effects:

Harmful by ingestion and inhalation. Upon decomposition toxic fumes of hydrogen chloride released.

Dangerous Reaction with:

Sulfuric acid and potassium permanganate.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Remove contaminated clothing. Wash with water for 10 minutes. Seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve in water and flush to foul water drain.

EEC. NO. 233-020-5

BARIUM NITRATE

Harmful

Oxidising

Harmful Effects

Harmful by inhalation and ingestion. Irritant to eye, skin and lungs. Fire may result if in contact with combustible, toxic fumes of nitrogen oxides upon decomposition.

Dangerous Reaction with:

Aluminium, powdered metals, combustible materials, organic chemicals.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Remove contaminated clothing. Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Wear eye protection, gloves and protective clothing. Dissolve in water. Add sodium or magnesium sulfate solution to precipitate the sulfate. Filter off barium sulfate and discard to refuse bin. Run filtrate to foul water drain with copious water.

EEC. NO. 215-128-4

BARIUM PEROXIDE

Harmful

Oxidising

Harmful Effects

Harmful by inhalation and ingestion. Irritant to eye, skin and lungs. Fire may result if in contact with combustibles.

Dangerous Reaction with:

Ethanoic acid and ethanoic anhydride cause explosions. Hydrogen sulfide will ignite if in contact. Water reacts vigorously giving a corrosive solution.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Wear eye protection, gloves and protective clothing. Dissolve in water. Add sodium or magnesium sulfate solution to precipitate the sulfate. Filter off barium sulfate and discard to refuse bin. Run filtrate to foul water drain with copious water.

BENEDICT'S SOLUTION

(COPPER CITRATE)

Harmful

Harmful Effects

Harmful by ingestion.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Flush a small amount (50 g) to foul water drain.

EEC. NO. 201-762-9

BENZENE-1,2,3- TRIOL

(PYROGALLOL)

Harmful

Harmful Effects

Harmful by inhalation, skin and **Eye Contact** and ingestion. Irritant to eyes, skin and lungs. May burn skin if not washed off.

Dangerous Reaction with:

Concentrated nitric acid.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (50 g) in 1 litre of 10% sodium carbonate solution. Dilute to 10 litres and flush down foul water drain.

EEC. NO. 200-618-2

BENZOIC ACID

Harmful Effects

May be eye and skin irritant. Vapour of molten benzoic acid is very irritating to the respiratory system.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes, seek medical assistance.

Skin Contact: Wash with soap and water for 5 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add a small quantity (50 g) to sand (5 kg) and place in refuse bin.

EEC NO: 232-123-2

BISMUTH CHLORIDE


Corrosive

Harmful Effects

Kidney damage may occur due to ingestion. Irritant to eyes, skin and lungs.

Dangerous Reaction with:

Water - it decomposes into hydrochloric acid and bismuth oxychloride.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 2 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 233-139-2

BORIC ACID

Harmful Effects

Harmful if swallowed in large amount. May be irritant to eyes and skin.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical attention.

Disposal: Small quantities (100 g) may be dissolved in 10 litres water and flushed to the foul water drain with running water.

EEC. NO. 231-778-1

BROMINE

Very Toxic

Corrosive

Dangerous to the environment

Harmful Effects

Highly toxic vapour. Severe eye and skin burns. Solutions less than 10% are harmful and irritant. Solutions stronger than 1% (0.06 M) are toxic and corrosive. Keep minimum quantity in stock (100 cm^3 or less).

Dangerous Reaction with:

Sodium, potassium, mercury, magnesium aluminium ammonia, alcohols, ethers - violent reactions occur.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 mins. Seek medical assistance.

Inhalation: Remove to fresh air. If any symptoms of distress occur seek urgent medical assistance.

Swallowed: Wash mouth and drink 500 cm^3 water. Seek medical attention immediately. Do not induce vomiting.

Spillage: Very small spillages less than 2 cm^3 may be treated with 10% sodium carbonate solution. Always ventilate the area before treating spillage. For a large volume spillage evacuate and call fire brigade.

Disposal: Small quantities (10 cm^3) may be disposed of in a fume cupboard by adding dropwise to 500 cm^3 of 10% sodium carbonate. Run residue to foul water drain with excess water.

EEC. NO. 200-825-8

BROMOETHANE

Harmful

Highly Flammable

Harmful Effects

Eye and skin irritant. Toxic. Vapour is very irritating to lungs. Dangerously flammable by heat, spark or contact with oxidisers. Toxic fumes of hydrogen bromide in fire.

Dangerous Reaction with:

Ignition source oxidising agents, reacts with water and steam to produce toxic and corrosive fumes.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth. Drink water. Seek medical attention.

Disposal: Small quantity (10 cm^3) may be evaporated in fume cupboard or in the open in a safe and supervised location. Larger quantities should be disposed of by a licensed EPA Approved Chemical Waste Disposal Contractor.

BUFFER TABLETS

Harmful Effects

Dust may be irritating. Avoid Skin Contact.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve small quantity (50 g) in water (5) and flush to foul water drain.

EEC. NO. 200-889-7

Tertiary - BUTYL ALCOHOL

Harmful

Highly Flammable

Harmful Effects

Harmful by ingestion. Eye irritant. Fire hazard when exposed to ignition source or oxidising agents.

Dangerous Reaction with:

Ignition source, oxidisers, potassium – sodium alloys, chromium trioxide.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with soap and water for 5 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dilute small quantities (100 cm^3) in 10 litres water and run to foul water drain with excess water.

EEC. NO. 200-848-3

CALCIUM CARBIDE

Highly flammable

Harmful Effects:

Ethyne (acetylene), an extremely flammable gas is released upon contact with water. Tins must not be opened with steel implements as sparks may cause explosion. Severe eye hazard.

Dangerous reaction with:

Water, acid, bromine, chlorine, silver nitrate, tin chloride, sulfur, iron oxide, iron chloride, methanol, copper and copper salts.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Inhalation:	Remove to fresh air. If any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add small quantity (100 g) slowly to water in fume cupboard. Leave for 4 hours. Run sludge to waste down the foul water drain with excess water.

EEC. NO. 207-439-9

CALCIUM CARBONATE

Harmful Effects:

Moderate skin irritant. Food additive.

Dangerous reaction with:

Acids, alum, ammonium salts.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 2 minutes.
Swallowed:	Rinse mouth. Drink Water (500 cm^3). Seek medical assistance if symptoms of illness occur.
Disposal:	Mix 100 g with 1 kg sand and put in refuse bin.

EEC. NO. 231-908-7

CALCIUM CHLORATE (I)

(CALCIUM HYPOCHLORITE, BLEACHING POWDER)

Oxidising

Harmful Effects:

Dangerous to eyes and skin. Fine dust is particularly hazardous to eyes.

Dangerous reaction with:

Acids - chlorine is released, ammonium salts, methanol ethanol and other organics, sulfur, rust. Decomposes releasing oxygen, fire hazard with combustible.

Corrosive

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add a small quantity (50 g) to water (1 litre) and flush to foul water drain.

Dangerous to the environment

EEC. NO. 233-140-8

CALCIUM CHLORIDE

Harmful Effects:

Irritating to skin, eyes and lungs. Anhydrous salt may cause water to boil

Dangerous reaction with:

Water, zinc, boron oxide. Upon decomposition hydrogen chloride fumes evolved.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Inhalation:	Remove to fresh air. If history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve small quantities (100 g) in 10 litres of water and run to foul water drain with excess water.

EEC. NO. 215-137-3

CALCIUM HYDROXIDE

Harmful Effects:

Irritant to eyes, skin and lungs.

Dangerous reaction with:

Water, heat evolved may eject solution. Zinc, aluminium - hydrogen released, trichloroethane. Eye protection essential even with dilute solutions.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water. Seek medical assistance.
Disposal:	Dissolve in water adding the solid cautiously. Use 50 g caustic to 5 litres of water. Acidify with 1 M ethanoic acid (150 cm^3) and flush to foul water drain.

EEC. NO. 231-900-3

CALCIUM SULFATE

Dangerous reaction with:

Aluminium powder as explosion occurs upon heating, likewise phosphorus upon heating ignites. Heat evolved when the anhydrous salt comes in contact with water.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Add small quantities (100 g) to 10 litres of water. After 2 hours flush sludge to foul water drain with excess water.

EEC. NO. 231-179-5

CALCIUM TURNINGS

Flammable

Harmful Effects:

Highly flammable gas, hydrogen is produced upon water contact. Moisture will convert calcium to the oxide and hydroxide which are skin and eye irritants. Containers upon standing may become pressurised. Calcium is difficult to ignite but burns vigorously when lit.

Dangerous reaction with:

Alkali metal hydroxides or carbonates, lead chloride and phosphorus oxide with heat, sulfur with heat, molten calcium reacts explosively with asbestos cement, halogens, mercury, incompatible with air, acids.

Handling Procedure:

Wear gloves and glasses when handling. If vapour or dust is formed, handle in a fume cupboard.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If large are is affected or blistering occurs, seek medical assistance.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add small quantities (100 g) slowly to 10 litres of water in the open. Leave for 2 hours and flush to foul water drain with excess water.

EEC. NO. 264-846-4

CHARCOAL

Harmful Effects:

May irritate skin and eyes.

Dangerous reaction with:

Oxidising Agent. Charcoal blocks retain heat after use. Do not collect together and store.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Mix with coal, slack or turf and burn in a fire. Alternatively mix a small quantity (50 g) with sand (1 kg) and place in refuse bin.

EEC. NO. 208-066-4

2-CHLORO-2-METHYL PROPANE (tertiary -BUTYL CHLORIDE)

Highly flammable

Harmful Effects:

Harmful by ingestion. Irritating to eyes and skin, vapour is highly flammable and narcotic if inhaled. Toxic fumes of hydrogen chloride upon decomposition.

Dangerous reaction with:

Sodium – explosive reaction.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air.

Swallowed: Rinse mouth. Drink water. Seek medical assistance.

Disposal: A small quantity (10 cm^3) may be emulsified with detergent and flushed to foul water drain. Larger quantities should be disposed of by a licensed EPA Approved Chemical Waste Disposal Contractor.

EEC. NO. 201-069-1

CITRIC ACID

Harmful Effects:

Harmful if ingested in quantity. A severe eye and moderate skin and eye irritant. May provoke allergy.

Dangerous reaction with:

Metal nitrates, danger of explosion.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 2 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Mix with excess sand and dispose to refuse bin.

EEC. NO. 231-589-4

COBALT CHLORIDE

Harmful Effects:

Avoid skin contact as sensitisation may occur. Harmful if swallowed. Toxic fumes of hydrogen chloride evolved upon decomposition.

Toxic

Dangerous reaction with:

Ignites on contact with lithium, incompatible with zinc.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve small quantity (25 g) in water. Add slowly to 1 M sodium hydroxide solution. Filter off slurry and bag for landfill waste. Neutralise the filtrate with 1 M ethanoic acid and flush to foul water drain.

Dangerous to the environment

EEC. NO. 231-159-6

COPPER

Harmful Effects:

Ingestion results in nausea and vomiting.

Dangerous reaction with:

Ethylene oxide, ammonium nitrate. Ignites on contact with chlorine, reacts violently with chlorates, bromates, incandescent reaction with potassium oxide.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with soap and water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Mix with excess sand and dispose to refuse bin.

EEC. NO. 235-113-6

COPPER CARBONATE

Harmful Effects:

Dust is a lung and eye irritant. Harmful by ingestion.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Dust Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add to excess sand (100 g to 5 kg) and place in refuse bin.

EEC. NO. 221-838-5

COPPER NITRATE

Harmful

Oxidising

Harmful Effects:

Harmful if swallowed. Irritating to the skin and eyes, Toxic fumes of nitrogen oxides produced upon decomposition.

Dangerous reaction with:

Combustibles, violent reaction with acetic anhydride, may ignite if left in contact with paper, concentrated solutions may ignite in contact with tin foil.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Mix small quantity (50 g) with excess sand and dispose to refuse bin.

EEC. NO. 215-270-7

COPPER (I) OXIDE

Harmful

Harmful Effects:

Harmful if swallowed. Eye and lung irritant.

Dangerous reaction with:

Explodes when heated with powdered aluminium, hydrogen, magnesium, phthalic anhydride. Incompatible with metals and reductants.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Mix small quantities with excess sand and dispose to refuse bin.

EEC. NO. 231-847-6

COPPER SULFATE

Harmful

Dangerous to the environment

Harmful Effects:

Harmful to swallow. Eye and skin irritant and may cause sensitisation. Toxic fumes of oxides of sulfur upon decomposition.

Dangerous reaction with:

Magnesium, hydroxylamine.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Vomiting normally occurs. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Mix small quantities with excess sand and dispose to refuse bin.

CRUDE OIL

Extremely Flammable

Dangerous to the Environment

Harmful Effects:

Contains benzene, a human carcinogen. **NOT** suitable for use in a school.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with soap and water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved Licensed Chemical Waste Disposal Collector.

EEC. NO. 203-807-8

CYCLOHEXENE

Irritant

Highly Flammable

Dangerous to the Environment

Harmful Effects:

Moderately toxic by ingestion and inhalation. A dangerous fire hazard if exposed to flame. Irritant and lachrymatory.

Dangerous reaction with:

Oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with soap and water.

Inhalation: Remove to fresh air and keep warm.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Small quantities (100 cm^3) may be evaporated in a fume cupboard or outdoors in a safe area under supervision. Large quantities (2.5 litres) should be disposed of by an EPA Approved Licensed Chemical Waste Disposal Contractor.

EEC. NO. 204-679-6

1,6-DIAMINOHEXANE

Harmful Effects:

Irritating to eyes, unpleasant fumes. Harmful by inhalation, skin contact or if swallowed.

Dangerous reaction with:

Oxidisers.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with soap and water for 10 minutes. If blistering or extensive irritation occurs, seek medical attention.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve a small quantity (50 g) in water (2 litres) and add 1 M HCl until just acidic. Flush to foul water drain.

EEC. NO. 203-326-3

DI (DODECANOYL) PEROXIDE

Irritant

Oxidising

Harmful Effects:

This is a flammable solid which if ignited will burn vigorously. In contact with combustibles, fire will result. Irritant to eyes, skin and lungs.

Dangerous reaction with:

Acids, salts, alkalis, reducing agents, combustibles, heavy metal salts, heat.

IMPORTANT:

Open the bottle slowly as a contaminated screw thread may catch fire by friction.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur. Seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add small quantity (10 g) to 1 litre 2 M sodium hydroxide. Stand for 2 days and flush to foul water drain.

EEC. NO. 200-449-4

EDTA -di-SODIUM SALT

Irritant

Harmful Effects:

Harmful if ingested in quantity, eye and skin irritant. Toxic fumes of nitrogen oxides released upon decomposition.

Dangerous reaction with:

Oxidising agents.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. Seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Mix a small quantity (10 g) with sand (5 kg) and dispose to refuse bin.

ENZYMES

Avoid raising dust as enzymes are potential allergens and may cause asthma and or dermatitis. Dust will prove irritating to eyes, nasal membranes and lungs.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Dust Inhalation:	Remove to fresh air. If any symptoms persist or any history of respiratory disease exists. Seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Mix solids with excess sand (100 g/ 5 kg of sand) and put in refuse. Flush solutions with excess water to foul drain.

EEC. NO. 200-836-8

ETHANAL (ACETALDEHYDE)

Irritant

Harmful Effects:

Narcotic, irritant by inhalation. A severe eye and skin irritant, dangerous fire hazard, suspected reproductive effects – classified as category 3 carcinogen.

Dangerous reaction with:

Alcohols, ketones, phenols, ammonia, halogens, phosphorus, sulfuric acid, other acids, silver nitrate, may polymerise violently in presence of metal impurities or traces of acids.

Extremely flammable

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air, if symptoms persist. Seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Small amounts (50 cm^3) may be left to evaporate in a fume cupboard or in the open in a safe and supervised position. Smaller amounts may be emulsified and washed to the foul water drain.

EEC. NO. 200-473-5

ETHANAMIDE (Acetamide)

Harmful

Harmful Effects:

Category 3 Carcinogen. May irritate eyes and skin

Dangerous reaction with:

Sodium or calcium chlorate - explosive by-product. With sodium nitrate - upon heating explosion may occur. If heated to decomposition toxic fumes of nitrogen oxide produced.

Handling Precautions

Wear gloves and work in a fume cupboard.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Wash skin for 10 mins. If blistering occurs seek medical assistance.
Swallowed:	Wash out mouth and throat, drink water (500 cm^3). Seek medical assistance.
Inhalation:	Remove to fresh air.
Disposal:	Add a small quantity (50 g) to water (10 litres) and flush to foul water drain.

EEC. NO. 205-634-3

ETHANEDIOIC ACID (OXALIC ACID)

Harmful

Harmful Effects:

Severe eye and skin irritant. Harmful by ingestion.

Dangerous reaction with:

Oxidising agents as violent reactions occur.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve (10 g) in water (10 litres) and flush to foul water drain.

EEC. NO. 200-580-7

Corrosive

ETHANOIC ACID (Acetic Acid)

Harmful Effects:

The vapour is very irritating to lungs. Asthma sufferers should avoid smelling this acid. Concentrated acid (4 M or more) causes severe burns.

Dangerous reaction with:

Peroxides, nitric acid, chromium oxide, manganates as explosions may occur.

Flammable

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash skin for 10 mins. Remove contaminated clothing.

Inhalation: Remove to fresh air. If breathing is difficult. Seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add dropwise to water (250 cm^3 to 10 litres water) and wash to foul water drain. Use fume cupboard or if unavailable an organic vapour cartridge respirator in a well ventilated area.

EEC. NO. 200-578-6

Highly flammable

ETHANOL

Harmful Effects:

Narcotic in large quantity, Highly Flammable vapour,

Dangerous reaction with:

Oxidising agents, platinum, potassium, mercury (II), silver nitrate, bromine,

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes, Seek medical assistance,
Skin Contact:	Wash with water.
Inhalation:	Remove to fresh air. Rest and keep warm.
Swallowed:	Rinse mouth, Drink water (500 cm^3). Seek medical assistance if drunken symptoms arise or methanol involved.
Disposal:	Add a small quantity, (50 cm^3) to water (1 litre) and flush to foul water drain.

EEC. NO. 200-467-2

ETHOXYETHANE (DIETHYL ETHER)

Extremely Flammable

Harmful Effects:

Causes eye and respiratory irritation and at high concentrations produces central nervous system depression and narcosis.

The liquid rapidly vaporises and the heavy vapour may ignite from a distant source. Flashback ignition has been known to cause fires. Do not use in an area where ignition sources such as Bunsen or electrical equipment are in use. Do not store in fridge as light or thermostat may cause ignition. Explosive peroxides form if left in sunlight or stored over years. Carry out Peroxide Test: Shake a crystal of potassium iodide with 1 cm^3 conc. ethanoic acid in a test tube. Add 1 cm^3 ethoxyethane. Yellow discoloration indicates presence of peroxides, red or brown indicates a dangerous level. Use ethanol for a control test. To destroy peroxides shake ethoxyethane with 1 M iron(II)sulfate, in proportion 2: 1. Retest for peroxide. Dry with anhydrous sodium sulfate. Do not store after this treatment. Use or dispose as inhibitors have now been also destroyed.

Dangerous reaction with:

Ignition source, oxidisers, bromine or chlorine.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Inhalation:	Remove to fresh air and rest.
Swallowed:	Rinse mouth, drink water (500 cm^3). Symptoms akin to alcohol. Seek medical assistance if drunken symptoms arise.
Disposal:	Evaporate small quantities (50 cm^3) in fume cupboard or in the open in a safe and supervised position.

EEC. NO. 200-500-4

Highly flammable

ETHYL ETHANOATE

Harmful Effects:

Toxic by inhalation. The vapour is highly flammable even at low temperatures. Irritating to eyes and lungs. The sweet odour may be addictive.

Dangerous reaction with:

Oxidisers, flame or heat.

Irritant

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Inhalation: Remove to fresh air. Rest and keep warm. Seek medical advice.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Washings may be mixed with detergent and flushed to foul water drain. Large amounts (50 cm^3) may be evaporated in fume cupboard or in the open in a safe and supervised position.

FEHLING'S SOLUTION NO. 1.

(COPPER SULFATE SOLUTION)

Harmful Effects:

Harmful

Irritant to eyes on contact. Harmful upon ingestion, toxic fumes of oxides of sulfur upon decomposition.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Treat with sodium carbonate solution and let solid settle. Decant liquid to the foul water drain. The solid may be mixed with sand and put in refuse bin.

FEHLING'S SOLUTION NO. 2.

(Conc. SODIUM HYDROXIDE SOLUTION)

Corrosive

Harmful Effects:

Severe burns to eyes and skin. Mist is irritant, severe internal irritation and damage, by ingestion.

Dangerous reaction with:

Acids, zinc, aluminium. Eye protection is essential.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes, seek medical assistance.

Skin Contact: Remove contaminated clothing. Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Small quantities (50 cm^3) may be diluted in 10 litres water, acidified with 1 M ethanoic acid and flushed to foul water drain.

GELATINE

Harmful Effects:

May be harmful if ingested in large quantity, slight skin allergen. Some grades used as food additives.

Dangerous reaction with:

Oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance if symptoms of illness occur.

Disposal: To refuse bin.

EEC. NO. 200-075-1

D-GLUCOSE ANHYDROUS

Harmful Effects:

Combustible, eye irritant.

Dangerous reaction with:

Oxidisers, sulfuric acid.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Put in refuse bin.

EEC. NO. 200-289-5

GLYCEROL

Harmful Effects:

If large quantity is consumed, nausea, vomiting and headache will ensue. Eye irritant, combustible.

Dangerous reaction with:

Oxidisers, potassium manganate(VII).

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Mix with sand and place in refuse bin.

EEC. NO. 231-955-3

GRAPHITE

Harmful Effects

Eye, skin and lung irritant.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Dust Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Mix with sand and place in refuse bin.

EEC. NO. 203-876-4

HEXANEDIOYL CHLORIDE (ADIPOYL CHLORIDE)

Corrosive

Harmful Effects:

Combustible, causes burns, if ingested. Severe irritation and damage, irritant vapour.

Dangerous reaction with:

Water, oxidisers. Ammonia, amines - violent reaction.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If blisters occur. Seek medical assistance.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Pour a small quantity of the liquid (50 cm^3) slowly into water (5 litres) in a fume cupboard. Leave for 3 hours in fume cupboard and flush to foul water drain.

EEC. . NO. 231-595-7

HYDROCHLORIC ACID

Harmful Effects:

Vapour irritating to lungs, may cause burns to eyes and skin.

Dangerous Reaction with:

Metals, violent reaction with sodium, magnesium, calcium, aluminium; phosphoric acid liberates hydrogen chloride gas, potassium manganate, sulfuric acid.

Corrosive

First Aid:

Eye contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin contact:	Wash with water for 10 minutes. If blisters occur. Seek medical assistance.
Fume Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Neutralise with sodium carbonate and flush to foul water drain with excess water.

EEC. NO. 231-765-0

HYDROGEN PEROXIDE (100 Vol.).

Corrosive

Oxidising

Harmful Effects

Corrosive, burns skin and eyes. Serious internal damage if swallowed.

Dangerous Reaction with:

Organic compounds such as ethanol, glycerol, propanone, metals and metal oxides and tin(II) chloride.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Causes serious internal injury due to release of oxygen. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add small quantity (100 cm^3) to 10 litres of water and flush to foul water drain.

EEC. NO. 226-798-2

HYDROXYLAMINE HYDROCHLORIDE

Irritant

Harmful Effects:

Moderately toxic by ingestion, eye, skin and lung irritant. Upon decomposition toxic fumes of hydrogen chloride and nitrogen oxides released. Decomposes when moist.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve small quantities (50 g) in 10 litres water and flush to foul water drain.

INDICATORS AND DYES

Indicators and dyes present a low hazard provided they are handled with the care required in handling laboratory chemicals.

Take care to avoid skin and eye contact with the solid by wearing gloves, eye protection and protective clothing. The staining of skin is the most frequent complaint. Exposure to inhaled dust could lead to irritation and in some cases sensitisation.

In solution the solvent will be most likely the major hazard. Warnings of "Suspected Carcinogen" on some containers refer to high level dosage animal studies.

Procion dyes can act as sensitisers. The M-X range has a higher risk of provoking respiratory sensitisation than the H-E range.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If blisters occur, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Solids should be mixed with excess sand and put in refuse. Solutions should be diluted in a large volume of water (100 cm^3 of indicator in 5 litres of water) and flushed to foul water drain.

EEC. NO. 231-442-4

IODINE

Harmful

Dangerous to the Environment

Harmful Effects:

Harmful by skin contact and by inhalation. Avoid eye contact. If left on skin a burn will occur.

Dangerous Reaction with:

Sodium, aluminium, potassium, magnesium, zinc, ammonia can give violent reactions.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If blisters occur, seek medical assistance.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add a small quantity (50 g) to 250 cm^3 of 1 M sodium thiosulfate (25%). When colourless, flush to foul water drain.

EEC. NO. 231-096-4

IRON (FINE AND COARSE grade)

Harmful Effects:

An eye irritant as the iron oxidises rapidly in the saline atmosphere.

Dangerous Reaction with:

Oxidising agents.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Mix 100 g with 1 kg of sand and place in refuse bin.

EEC. NO. 231-729-4

IRON(III)CHLORIDE

Irritant

Harmful Effects:

Eye and skin irritant. Severe eye burn may result if left unattended. Upon decomposition toxic fumes of hydrogen chloride produced.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve small quantity (50 g) in 10 litres water and flush to foul water drain.

EEC. NO. 215-168-2

IRON(III)OXIDE

Harmful Effects:

Dust is irritating to eyes and lungs. Moderately toxic by ingestion.

Dangerous Reaction with:

May form explosive reaction with carbon monoxide, violent reaction with hydrogen peroxide, violent reaction occurs if heated with powdered aluminium, magnesium or metal acetylides.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Mix with excess sand and dispose to refuse bin.

EEC. NO. 231-753-5

IRON(II) SULFATE

Harmful

Harmful Effects:

Harmful if swallowed. Irritating to eyes and skin. Used as a pesticide. Upon decomposition toxic fumes of oxides of sulfur released.

Dangerous Reaction with:

May ignite on contact with sodium nitrate.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve small quantity (50 g) in 10 litres water and flush to foul water drain.

LEAD ACETATE PAPERS

Harmful

Harmful Effects:

Lead is an accumulative poison. Wear gloves when handling. Reproductive hazard. May impair fertility and cause harm to the foetus.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes, seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Disposal:	Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 233-084-4

Toxic

Dangerous to the environment

LEAD BROMIDE

Harmful Effects:

Reproductive hazard. Category 3 carcinogen. Danger of cumulative effects, foetal damage, reduced fertility, harmful by contact with skin, lungs or ingestion. When heated lead bromide decomposes to produce lead and bromine fumes.

Harmful Effects

Reproductive hazard. Toxic, Category 3 carcinogen. Danger of cumulative effects. Risk of damage to foetus, impairment of fertility, kidney damage, skin irritant.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes.
Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 206-104-4

Toxic

LEAD(II) ETHANOATE

Harmful Effects

Reproductive hazard. Toxic, Category 3 carcinogen. Danger of cumulative effects. Risk of damage to foetus, impairment of fertility, kidney damage, skin irritant.

Dangerous to the environment

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with soap and water.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 231-100-4

LEAD FOIL

Toxic

Harmful Effects:

Ingestion or inhalation of dust presents a hazard of lead poisoning, foetal damage, reduced fertility, kidney damage. In solid form safe to handle if hands are washed afterwards.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 233-245-9

LEAD(II) NITRATE

Toxic

Oxidising

Dangerous to the Environment

Harmful Effects:

Reproductive hazard category 1. Danger of cumulative effects. Ingestion or inhalation of dust presents a hazard of lead poisoning, foetal damage, reduced fertility, kidney damage. In solid form safe to handle if hands are washed afterwards. Upon decomposition toxic fumes of nitrogen oxides and lead oxide released.

Dangerous Reaction with:

Reducing Agents

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 215-267-0

LEAD (II) OXIDES

Toxic

Dangerous to the Environment

Harmful Effects:

Reproductive hazard. Danger of cumulative effects. Ingestion or inhalation of dust presents a hazard of lead poisoning, foetal damage, reduced fertility, kidney damage. In solid form safe to handle if hands are washed afterwards.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 231-100-4

LEAD SHOT

Toxic

Harmful Effects:

Reproductive hazard. Accumulative poison by ingestion and dust inhalation, may cause foetal damage, reduced fertility and kidney damage.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 232-455-8

LIQUID PARAFFIN

Harmful Effects

Purgative.

Dangerous Reaction with:

Oxidising Agent.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with soap and water.

Swallowed: Drink water (500 cm^3).

Disposal: Add a small amount (100 g) to excess sand (5 kg) mix and discard to refuse bin.

EEC. NO. 231-212-3

LITHIUM CHLORIDE

Harmful

Harmful Effects:

Harmful by ingestion. A severe eye and skin irritant. Toxic fumes of hydrogen chloride produced upon decomposition.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes, seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve (10 g) in excess water (10 litres) and flush to foul water drain with excess water.

EEC. NO. 231-102-5

LITHIUM METAL (IN PARAFFIN)

Highly Flammable

Corrosive

Harmful Effects:

The metal catches fire in air at temperatures above 180 °C. It can cause burns. In case of fire, use sand.

Dangerous Reaction with:

Water (corrosive liquid produced), nitric acid, 1,1,1-trichloethane and mercury.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add small quantities (10 g) to a large excess (10 liters) of water and after reaction has ceased flush to foul water drain with excess water.

EEC. NO. 231-104-6

MAGNESIUM

Highly Flammable

Harmful Effects:

Poison by ingestion. Inhalation of dust and fumes may cause metal fume fever (flu like symptoms). Particles imbedded in skin may cause gaseous blebs which are slow to heal. Although difficult to ignite, vigorous burning occurs and it is difficult to extinguish except by the use of sand.

Dangerous Reaction with:

Oxidising agents - explosive reactions, sulfur, alcohols, 1,1,1-trichloroethane and similar compounds, bromine, silver nitrate, sulfates and metal oxides.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes, seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Diarrhoea is likely, seek medical assistance.
Disposal:	Dissolve small quantities (10 g) in dilute acid and after neutralisation run to foul water drain with excess water.

EEC. NO. 232-094-6

MAGNESIUM CHLORIDE

Harmful Effects:

Moderately toxic by ingestion, when heated to decomposition toxic fumes of hydrogen chloride produced.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 5 minutes. If blistering occurs, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Diarrhoea is likely, seek medical assistance.
Disposal:	Dissolve in water and flush to foul water drain.

EEC. NO. 233-826-7

MAGNESIUM NITRATE

Oxidising

Harmful Effects

Severe irritant to eyes, skin and mucous membranes, powerful oxidiser. Toxic fumes of nitrogen oxides upon decomposition.

Dangerous Reaction with:

Aluminium, combustibles.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If blisters occur, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Diarrhoea is likely. Seek medical assistance.
Disposal:	Dissolve in water and flush to foul water drain.

EEC. NO. 231-298-2

MAGNESIUM SULFATE

Harmful Effects:

Moderately toxic by ingestion. Explosive reaction if heated with ethoxyethyl alcohols. Upon decomposition toxic fumes of oxides of sulfur produced.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Diarrhoea is likely. Seek medical assistance.
Disposal:	Dissolve in water and flush to foul water drain.

EEC. NO. 200-716-5

MALTOSE

Harmful Effects:

Dust may irritate eyes.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Put in refuse bin.

EEC. NO. 215-202-6

MANGANESE(IV) OXIDE

Harmful

Harmful Effects:

If swallowed or dust inhaled, it is harmful. It is also irritating to eyes and skin.

Dangerous Reaction with:

Metal powders such as aluminium and oxidants such as potassium chlorate.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Mix with sand and dispose to refuse bin.

EEC. NO. 232-089-9

MANGANESE SULFATE

Harmful

Harmful Effects:

Upon heating to decomposition toxic fumes of oxides of sulfur are evolved, inhalation of dust may cause manganese poisoning; central nervous system damage.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (25 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 231-106-7

MERCURY

Toxic

Harmful Effects:

The vapour is toxic. An accumulative poison. The surface area of mercury in contact with air should be kept to a minimum so as to reduce losses as vapour. Likewise, mercury should not be subjected to heat. Wear gloves and no gold, silver or platinum jewellery when handling mercury.

Dangerous Reaction With:

Alkali metals, aluminium, ammonia, bromine, chlorine - with these chemicals violent reactions occur.

SPILLAGE: Use syringe or tube connected to a vacuum pump via a trap to suck up mercury. To reduce the risk of air contamination by small droplets clean up spillage area with a hot paste of calcium hydroxide and flowers of sulfur in water. Spread the same dry mix in areas that are inaccessible and where traces of mercury are present.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Inhalation:	Remove to fresh air.
Swallowed:	Seek medical attention. Normally a low hazard.
Disposal:	Mercury should be disposed of it should be recovered and recycled. To dispose use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 244-654-7

MERCURY(II) OXIDE

Harmful Effects:

Very toxic if swallowed, dust inhaled or by skin contact. An accumulative poison. The principal effect is upon the central nervous system with tremors and psychic disturbances. A powerful oxidant and catalyst.

Very Toxic

Dangerous Reaction with:

Acetyl nitrate – explosive reaction, metals, phosphorus, nitric acid and hydrogen peroxide, reducing agents. Upon heating toxic fumes of mercury vapour released.

Dangerous to the Environment

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Seek urgent medical assistance.

Disposal: This material should be disposed of only by a licensed EPA Approved Chemical Waste Disposal Contractor.

EEC. NO. 231-992-5

MERCURY(II) SULFATE

Very Toxic

Dangerous to the Environment

Harmful Effects:

Highly toxic if swallowed, dust inhaled. Moderately toxic by skin contact. An accumulative poison. The principal effect is upon the central nervous system with tremors and psychic disturbances. Upon decomposition toxic fumes of mercury and sulfur oxides are released.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Seek urgent medical assistance.

Disposal: This material should be disposed of by a licensed EPA Approved Chemical Waste Disposal Contractor.

EEC. NO. 200-001-8

METHANAL, (FORMALIN)

Toxic

Corrosive

Harmful Effects:

Toxic by skin contact, ingestion and by inhalation. A Category 3 carcinogen. Sensitiser by skin contact. Solution causes burns and is a severe eye hazard. Eye contact has resulted in blindness. Safety goggles are essential.

Dangerous Reaction With:

Flame, oxidisers, nitrogen oxides - explosive at 180 °C.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medica1 assistance.

Disposal: Add small quantities (100 cm^3) to 10 litres of water and flush to foul water drain.

EEC. NO. 200-579-1

METHANOIC ACID (Formic Acid)

Corrosive

Harmful Effects:

The vapour is very irritating to lungs. Severe burns, to eyes and skin.

Dangerous Reaction with:

Peroxides, nitric acid, chromium (VI) oxide, manganates as explosions may occur, with heat decomposition occurs producing carbon monoxide.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 mins. Seek medical assistance.
Skin Contact:	Wash skin for 10 mins. and if blisters occur, seek medical assistance.
Inhalation:	Remove to fresh air. If breathing is difficult, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add drop-wise to water (250 cm^3 to 10 litres water) and wash to foul water drain. Use fume cupboard or if unavailable organic vapour cartridge respirator.

EEC. NO. 200-659-6

METHANOL

Highly flammable

Toxic

Harmful Effects:

Toxic by ingestion, inhalation. Much more poisonous than ethanol. Vapour is narcotic and highly flammable.

Dangerous Reaction with:

Oxidising agents, platinum, mercury(II), silver nitrate, bromine, potassium.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add a small quantity (50 cm^3) to water (1 litre) and flush to foul water drain.

EEC. NO. 203-625-9

METHYLBENZENE (TOLUENE)

Highly flammable

Harmful Effects:

Vapour ignites at low temperature. Explosive vapour air mixtures may form. Inhalation may cause headache, dizziness, nausea. Eye and nasal membrane irritation.

Dangerous Reaction with:

Oxidisers, ignition sources.

Harmful

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with soap and water.

Inhalation: Remove to fresh air.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Small quantities (50 cm^3) may be evaporated in a fume cupboard or in the open in a safe and supervised position.

EEC. NO. 231-743-0

NICKEL CHLORIDE

Harmful

Harmful Effects

Harmful by ingestion. Skin irritant and may cause dermatitis. sensitiser. Upon decomposition toxic fumes of hydrogen chloride produced.

Dangerous Reaction with:

Violent reaction with potassium.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve (10 g) in 10 litres water and flush to foul water drain with excess water.

EEC. NO. 231-714-2

NITRIC ACID

Corrosive

Oxidising

Harmful Effects

Vapour is dangerous to lungs and eyes. Severe burns from skin contact. The concentrated acid is colourless. Brown discoloration indicates decomposition and it should be replaced.

Handling Procedure:

Wear suitable protective clothing and eye protection.

Dangerous Reaction with:

Combustibles, metals, lithium, sodium, potassium and magnesium ignite on contact, organics such as ethanol, propane, ethanoic acid, thiocyanates, thiosulfates give violent reactions.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Fume Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth and give water or milk to drink. Seek medical assistance.

Disposal: Dilute small quantities (200 cm^3) in 2 litres water. Add sodium carbonate slowly until neutralisation. Flush with excess water to the foul water drain.

EEC. NO. 203-892-1

OCTANE

Highly flammable

Harmful

Dangerous to the environment

Harmful Effects:

Narcotic in high concentration, a dangerous fire and severe explosion hazard when exposed to oxidisers, heating or ignition. Irritates mucous membrane.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes, seek medical assistance.

Skin Contact: Wash well with soap and water.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Small amounts (50 cm^3) may be allowed to evaporate from a fume cupboard or a safe place in the open under supervision.

EEC. NO. 232-315-6

PARAFFIN WAX

Harmful Effects:

If ingested in quantity it may be harmful, repeated skin contact may cause irritation, combustible.

Dangerous Reaction with:

Flame, oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3)

Disposal: To refuse bin.

EEC. NO. 203-692-4

PENTANE

Highly flammable

Harmful Effects:

Highly dangerous, fire hazard when exposed to heat, flame or oxidisers. Severe explosion hazard if container exposed to heat on flame. Narcotic effect from vapour inhalation, liquid may cause dermatitis on skin contact.

Dangerous Reaction with:

Heat or ignition source, oxidisers.

Harmful

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes, seek medical assistance.

Skin Contact: Wash well with soap and water.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Small quantities (100 cm^3) may be evaporated in a fume cupboard or in the open in a safe and supervised position. Take care that no ignition sources are in the vicinity.

Dangerous to the environment

PHENYL AMINE SULFATE (ANILINE SULFATE)

Harmful Effects:

Toxic if swallowed, inhaled or by skin absorption. Prolonged exposure may lead to irreversible effects. Category 3 carcinogen. Dermatitis hazard. Toxic fumes of nitrogen and sulfur oxides produced upon decomposition.

Toxic

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (50 g) in 300 cm^3 of 2 M hydrochloric acid. Leave for 24 hours and flush to foul water drain.

EEC. NO. 202-851-5

PHENYLETHENE (STYRENE)

Harmful

Flammable

Harmful Effects:

Irritating to eyes and skin, harmful by inhalation, vapour is explosive when mixed with air.

Dangerous Reaction with:

Sulfuric acid, chorine and iron(III), chloride above

50 °C, oxidising agents.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Very small quantity (5 cm^3) may be emulsified with detergent and washed to the foul water drain. Large quantities should be disposed of by a licensed EPA Approved Chemical Waste Disposal Contractor.

EEC. NO. 202-873-5


Toxic

PHENYLHYDRAZINE HYDROCHLORIDE

Harmful Effects:

Toxic by inhalation, in contact with the skin and if swallowed. Skin, eyes and lungs irritant, may cause dermatitis. Toxic fumes of nitrogen oxides and hydrogen chloride released upon decomposition.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical attention.
Disposal:	Dissolve small quantities (5 g) in 10 litres of water and flush with excess water to foul water drain.

EEC. NO. 231-633-2


Corrosive

PHOSPHORIC ACID

Harmful Effects

A corrosive irritant to eyes, skin and lungs. When heated to decomposition toxic fumes of phosphorus oxides released.

Dangerous Reaction with:

Chlorides and stainless steel as hydrogen is released, violent reaction with sodium tetrahydroborate.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If blisters occur, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical attention.
Disposal:	Dilute (100 cm^3) in water (10 litres) and flush with excess water to foul water drain.

EEC. NO. 231-768-7

Flammable

PHOSPHORUS (RED)

Harmful Effects:

Dangerous fire hazard if exposed to heat or oxidisers. Vapour from ignited phosphorus is strongly irritant to eyes, nose, throat and lungs.

Dangerous Reaction with:

Oxidising agents, in particular chlorates and metal

oxides, alkalis and heat. Take care to avoid contaminating screw thread of bottle cap when opening.

Dangerous to the environment

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical attention.

Disposal: Very small amounts (1 g) may be burned in a fume cupboard or in the open but a dense white irritant smoke is formed. Larger amounts of this material should be disposed of by a licensed EPA Approved Chemical Waste Disposal Contractor.

EEC. NO. 215-236-1

PHOSPHORUS(V) OXIDE

Corrosive

Harmful Effects

Severe irritant to respiratory system, burns eyes and skin.

Dangerous Reaction with:

Water - a violent reaction occurs, methanoic acid - a poison gas, carbon monoxide is released, sodium, potassium and iodides.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance
Skin Contact:	Wash with water for 10 minutes. If blisters occur, seek medical assistance.
Dust Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add a small quantity (50 g) very slowly to water (5 litres). Flush to foul water drain.

EEC. NO. 233-060-3

PHOSPHORUS PENTACHLORIDE

Corrosive

Harmful Effects

A solid which burns skin, severely irritating to mucous membranes and lungs. In moist air fumes of hydrogen chloride gas are formed.

Dangerous Reaction With:

Water, a violent reaction occurs emitting hydrogen chloride and diphosphane which may ignite, violent reactions with sodium and potassium. Leakage of hydrogen chloride from bottles of phosphorus pentachloride may corrode nearby iron and steel.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add a small quantity (100 g) to 5 litres water slowly with stirring in a fume cupboard. Neutralise and flush to foul water drain with excess water.

EEC. NO. 231-749-3

PHOSPHORUS TRICHLORIDE

Corrosive

Harmful Effects

A liquid which burns skin on contact and severely irritates lungs. Fumes of hydrogen chloride are produced in moist air. Hydrogen chloride leaking from bottle will corrode nearby steel and iron.

Dangerous Reaction with:

Water – violent reaction with HCl produced, sodium and potassium - violent reactions.

Toxic

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add a small quantity (100 g) to 5 litres water slowly with stirring in a fume cupboard. Neutralise and flush to foul water drain with excess water.

EEC. NO. 231-830-3

POTASSIUM BROMIDE

Harmful Effects:

Ingestion of large amounts may cause central nervous system depression, prolonged inhalation may cause skin eruptions.

Dangerous Reaction with:

Sulfuric acid: sulfur dioxide and hydrogen bromide released.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Dust Inhalation:	Remove to fresh air.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve small quantity (50 g) in excess water (5 litres) and flush to foul water drain.

EEC. NO. 223-289-7

POTASSIUM CHLORATE (V)

Oxidising

Harmful

Harmful Effects:

Explosive mixtures with combustibles. Do not use fabric gloves when handling this chemical. Harmful by inhalation of dust and by ingestion. Eye and skin irritant.

Dangerous Reaction with:

Combustibles, ammonia, ammonium salts, metal powders, manganese (V) oxide, sulfides, thiosulfates, sulfur, phosphorus, carbon, hydrocarbons, conc. sulfuric acid, phosphoric acid. As a safety precaution potassium or sodium chlorate should not be in use in the laboratory at the same time as conc. Sulfuric acid.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If blistering occurs, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve a small quantity (50 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 231-211-8

POTASSIUM CHLORIDE

Harmful Effects:

An eye irritant. Toxic chloride fumes released, upon decomposition.

Dangerous Reaction with:

Sulfuric acid and potassium manganate(VII).

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve in water and flush to foul water drain.

EEC. NO. 232-140-5

POTASSIUM CHROMATE

Toxic

Dangerous to the Environment

Harmful Effects:

Irritating to eyes, skin and respiratory system. Sensitiser. Ulceration may occur on damaged skin.

Dangerous Reaction with:

Organic chemicals, combustibles, aluminium, carbon, magnesium, sulfur, phosphorus. Explosive or vigorously burning mixtures formed.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Remove contaminated clothing and rinse until no further yellow colour released. Wash contaminated skin with water for 10 minutes.

Swallowed: Vomiting will occur. Rinse out mouth. Drink water (500 cm^3). Seek medical attention.

Disposal: Dilute washings with excess water and flush to foul water drain. For larger amounts dissolve in 1 litre of water. Add 100 cm^3 of 1 M sulfuric acid. In a fume cupboard add 50 g of sodium metabisulfite to produce a green solution of chromium (III) ions. Dilute to 10 litres with water and pour down the foul water drain.

EEC. NO. 237-323-3

POTASSIUM HEXACYANOFERRATE(III) (FERRICYANIDE)

Harmful Effects:

Harmful by ingestion in large quantity, irritant to eyes.

Dangerous Reaction with:

Nitrates, may explode on heating.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add small quantity (50 g) to 5 litres of water and flush to foul water drain.

POTASSIUM HEXACYANOFERRATE(II) (FERROCYANIDE)

Harmful Effects:

Harmful if large quantity ingested. Irritant to eyes.

Dangerous Reaction with:

Copper sulfate, chromium (VI) oxide and nitrates - explosive hazards. Do not heat in presence of acids as toxic gases may be released.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Add small quantities (50 g) to water (5 litres) and flush to foul water drain.

EEC. NO. 215-181-3

POTASSIUM HYDROXIDE

Corrosive

Harmful Effects

Causes severe burns to eyes and skin.

Dangerous Reaction with:

Water, heat evolved may eject solution. Zinc, aluminium - hydrogen released, trichloroethane. Eye protection essential even with dilute solutions.

Handling Procedure:

Wear suitable protective clothing and eye protection.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance. If practicable continue washing until medical assistance obtained.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve in water adding the solid cautiously. Use 50 g caustic to 5 litres water. Acidify with 1 M ethanoic acid (150 cm^3) and flush to foul water drain.

EEC. NO. 231-831-9

POTASSIUM IODATE(V)

Oxidising

Harmful Effects:

An oxidising agent which may ignite combustibles. In a fire harmful iodine vapour may be released. Avoid contact with the skin and eyes.

Dangerous Reaction with:

Combustibles including organics, aluminium, magnesium, carbon, sulfur, phosphorus.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Put a small quantity (100 g) into water (5 litres) while stirring. Add 100 cm^3 of 2 M sulfuric acid and 100 g of sodium metalisulfite. Continue adding sodium metalisulfite until iodine colour goes. Flush to foul water drain.

EEC. NO. 231-659-4

POTASSIUM IODIDE

Harmful Effects:

May be harmful by ingestion, eye irritant.

Dangerous Reaction with:

Incompatible with oxidants, when heated to decomposition toxic fumes of oxides and iodine released.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve (50 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 231-760-3

POTASSIUM MANGANATE(VII)

Oxidising

Harmful

Dangerous to the environment

Harmful Effects:

Harmful by ingestion. Contact with combustible material may cause fire.

Dangerous Reaction with:

Combustibles, metal powders, glycerol,

ammonia and ammonium compounds, concentrated sulfuric acid and phosphoric acid - manganese(VII) oxide is formed and is explosive. Solid potassium manganate should not be made available in the laboratory at the same time as concentrated sulfuric acid.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve 10 g in 1 litre of water in a fume cupboard. Add 1 litre of 1 M sulfuric acid. Add sodium metabisulfite with stirring until solution is colourless. Flush to foul water drain.

EEC. NO. 231-119-8

POTASSIUM METAL (IN MINERAL OIL)

Corrosive

Highly flammable

Harmful Effects:

In water a violent reaction occurs producing hydrogen and corrosive potassium hydroxide solution. The metal burns vigorously and is difficult to quench unless sand or special purpose dry powder is used. Do not use carbon dioxide or water extinguishers. Eye protection essential.

Dangerous Reaction with:

1,1,1-trichloroethane, water and similar chemicals.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Disposal: If yellow, do not cut as this indicates explosive hazard. Add small quantity (5 g) in small amounts to *tertiary*-butanol (200 cm^3). When reaction has ceased flush to foul water drain.

EEC. NO. 231-818-8

POTASSIUM NITRATE

Harmful Effects:

A strong oxidising agent which must be separated from combustibles. Avoid contact with the skin and eyes. Do not breathe dust.

Oxidising

Dangerous Reaction with:

Aluminium, magnesium, potassium, sodium and other metals as explosive mixtures form. Combustibles including organic chemicals, ammonium salts, cyanides, sulfides, thiosulfates and ethanoates. Explosive mixtures are formed.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes, seek medical assistance.
Skin Contact:	Remove contaminated clothing. Wash with water for 10 minutes.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve a small quantity (100 g) in water (10 litres) and flush to foul water drain

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EEC. NO. 212-769-1

POTASSIUM TARTRATE

Harmful Effects:

May be harmful if ingested, eye irritant. When heated to decomposition toxic fumes released.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve a small quantity (100 g) in water (10 litres) and flush to foul water drain.

EEC. NO. 200-662-2

Highly flammable

PROPANONE (Acetone)

Harmful Effects:

At low temperatures, vapour may ignite. Severe eye irritant and skin degreasing agent.

Dangerous Reaction with:

Nitric acid, oxidising agents - mixtures react violently.

Irritant

First Aid:

Eye Contact: Wash with gentle flow of water for 15 mins. Seek medical assistance.

Skin Contact: Wash with soap and water. If clothes are contaminated remove immediately because of fire hazard.

Inhalation: Remove to fresh air. If any symptoms persist, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Because of its water solubility it may be flushed to the foul water drain with large volumes of waters.

EEC. NO. 200-661-7

Highly flammable

PROPAN-2-OL

Harmful Effects:

Vapour may irritate eyes and skin, cause headaches and dizziness. Fire hazard due to low flash point.

Dangerous Reaction with:

Oxidising agents - vigorous reaction, ketones (except propanone) as peroxides form in days and create an explosion hazard.

Irritant

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with soap and water.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dilute small quantity (50 cm^3) with 3 litres water and flush to foul water drain.

EEC. NO. 213-900-3

SILICA GEL

Harmful Effects

Dust may irritate.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Mix with sand and put in refuse bin.

SILICONE OIL

Harmful Effects

Heat oil in fume cupboard as fumes are irritating.

Disposal: Small quantities may be emulsified with washing up liquid and discharged to the foul water drain.

EEC. NO. 231-853-9

SILVER NITRATE

Corrosive

Harmful Effects

Solutions are very dangerous to the eyes and blacken skin. If ingested internal damage may occur as silver is deposited in tissue. Solutions less than 0.5 M are irritant, greater than 0.5 M are corrosive.

Dangerous Reaction with:

Ammonia, ethanol and magnesium as explosive mixtures occur.

Dangerous to the environment

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Remove contaminated clothing and wash before reuse. If blistering occurs, seek medical attention. Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Use only EPA Approved licensed Chemical Waste Disposal Collector.

EEC. NO. 287-539-7

SODA LIME (CALCIUM OXIDE SLAKED WITH SODIUM HYDROXIDE)

Harmful Effects:

Very corrosive, burns eyes and skin. Eye protection is essential.

Corrosive

Dangerous Reaction with:

Acids, water.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Remove contaminated clothing and wash before reuse. Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Small quantities (50 g) may be added slowly to excess water (5 litres) and flushed to foul water drain.

EEC. NO. 231-132-9

SODIUM (IN MINERAL OIL)

Highly Flammable

Corrosive

Harmful Effects

In water a violent reaction occurs producing hydrogen and corrosive sodium hydroxide solution. The metal burns vigorously and is difficult to quench unless dry powder extinguisher or sand is used. Do not use carbon dioxide or water extinguishers. Eye protection is essential.

Dangerous Reaction with:

1,1,1-trichloroethane, water and similar chemicals; bromine, iodine, sulfur, mercury, oxidising agents.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes, seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3) in small bits. Seek medical assistance.

Disposal: Add a small quantity (5 g) in small pieces to 300 cm^3 ethanol or propan-2-ol. After reaction has ceased add solution to 5 litres water and flush to foul water drain.

EEC. NO. 241-004-4

SODIUM BOROHYDRIDE

Harmful

Highly Flammable

Harmful Effects

Toxic if in contact with skin or swallowed, a severe eye, skin, mucous membrane irritant. Toxic fumes of sodium oxides emitted in fire.

Dangerous Reaction with:

Releases hydrogen from water and other protonic solvents, reacts violently with anhydrous acids, fine metals, oxidisers. Do not store in glass jar.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes, seek medical assistance.
Skin Contact:	Wash with water for 10 minutes. If blisters occur, seek medical assistance.
Dust Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add a small amount (5 g) to water (1 litre) slowly. After 2 hours flush to foul water drain.

EEC. NO. 207-838-8

SODIUM CARBONATE

Irritant

Harmful Effects

Irritant to eyes, skin, dust irritates the lungs.

Dangerous Reaction with:

Aluminium, phosphorus, pentoxide, sulfuric acid, lithium.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes, seek medical assistance.
Skin Contact:	Wash with water.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve small quantity (50 g) and flush to foul water drain.

EEC. NO. 200-675-3

SODIUM CITRATE

Harmful Effects

Mildly toxic by ingestion. May irritate eyes on contact.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve a small quantity (50 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 234-190-3

SODIUM DICHROMATE

Irritant

Oxidising

Dangerous to the Environment

Harmful Effects:

Irritant to eyes, skin and lungs. May be sensitiser by skin contact, damaged skin may ulcerate.

Dangerous Reaction With:

Combustibles including organic chemicals, sulfur, phosphorus, aluminium, magnesium, carbon.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve small amount (50 g) in water (1 litre). Add 100 cm^3 1 M sulfuric acid. In a fume cupboard add 50 g sodium metabisulfite to convert it into chromium(III) ions (green solution). Dilute to 10 litres and flush to foul water drain.

EEC NO 231-890-0

SODIUM DITHIONITE (SODIUM HYDROSULFITE)

Irritant

Harmful Effects

An irritant and allergen, harmful if swallowed. Flammable when exposed to heat or flame. Ignites on contact with water. Decomposes violently when heated to 190 °C and releases toxic fumes of sodium and sulfur oxides. Contact with acids liberates toxic fumes. May cause sensitisation by skin contact.

Dangerous Reaction with

Water, oxidising agents, acids - sulfur dioxides released. This material may ignite spontaneously in air.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes, seek medical assistance.
Skin Contact:	Wash with water for 10 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	In a fume cupboard add a small quantity (10 g) to water (2 litres). Flush to foul water drain.

EEC. NO. 204-823-8

SODIUM ETHANOATE

Harmful Effects

Moderately toxic by ingestion, eye and skin irritant, carbon monoxide evolved upon heating.

Dangerous Reaction with:

Potassium nitrate.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 2 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve small quantity in water (3 liters) and flush to drain.

EEC. NO. 2056338

SODIUM HYDROGEN CARBONATE

Harmful Effects:

Ingestion of large amounts may cause convulsions, nausea, vomiting. Dust will irritate eyes and lungs.

Dangerous Reaction With:

Acids.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water for 2 minutes.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve (100 g) in 5 litres water and flush to foul water drain.

EEC. NO. 231-448-7

di SODIUM HYDROGEN ORTHOPHOSPATE

Harmful Effects:

Skin and eye irritant.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve in water and flush to foul water drain with excess water.

EEC. NO. 215-185-5

SODIUM HYDROXIDE

Corrosive

Harmful Effects

Causes severe burns to eyes and skin.

Dangerous Reaction with:

Water, heat evolved may eject solution. Zinc, aluminium - hydrogen released, trichloroethane. Eye protection essential even with dilute solutions.

Handling Procedure:

Wear gloves, eye protection and protective clothing even with dilute solutions.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Do not induce vomiting. Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve in water adding the solid cautiously. Use 50 g caustic to 5 litres water. Acidify with 1 M ethanoic acid (150 cm^3) and flush to foul water drain.

EEC. NO. 231-679-3

SODIUM IODIDE

Harmful Effects

Moderately toxic by ingestion, eye irritant.

Dangerous Reaction with:

Incompatible with oxidants, when heated to decomposition toxic fumes released.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Dissolve (50 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 231-554-3

SODIUM NITRATE

Harmful Effects

A strong oxidising agent which must be separated from combustibles. Do not breathe dust, avoid contact with the skin and eyes.

Dangerous Reaction with:

Aluminium, magnesium, potassium, sodium and other metals as explosive mixtures form. Combustibles including organic chemicals, ammonium salts, cyanides, sulfides, thiosulfates and ethanoates. Explosive mixtures are formed.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Remove contaminated clothing. Wash with water for 10 minutes.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (100 g) in water (10 litres) and flush to foul water drain.

EEC. NO. 231-555-9

Oxidising

SODIUM NITRITE

Harmful Effects

Very toxic, if swallowed, less than 1 g may cause serious poisoning, eye irritant.

Toxic

Dangerous Reaction with:

Acids as toxic, oxides of nitrogen released, combustibles, ammonium salts, cyanides, thiosulfates - explosive mixtures occur. Nitrite should not be reacted with secondary and *tertiary* amines as carcinogenic products may form. Azo dyes are best not isolated but made in small amounts and washed away.

Dangerous to the environment

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Wear eye protection, gloves and protective clothing. Dissolve a small quantity (25 g) in 500 cm^3 water, add 25 g ammonium chloride and heat to boiling. The nitrite is destroyed and nitrogen gas is released.

EEC. NO. 231-892-1

SODIUM PERSULFATE

Oxidising

Irritant

Harmful Effects

Irritating to eyes, skin and lungs, fire hazard when in contact with combustible to release toxic fumes of sodium and sulfur oxides.

Dangerous Reaction with:

Dilute hydrochloric acid (releases chlorines), combustibles.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes. If blisters occur, seek medical assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (25 g) in 2 litres water, add 150 cm^3 of 2 M sulfuric acid and slowly add 25 cm^3 of 100 'Vol' hydrogen peroxide. Wash to foul water drain.

EEC. NO. 231-820-9

SODIUM SULFATE

Harmful Effects

Ingestion of large amounts may cause nausea, convulsions. Irritant to eyes. In fire fumes of sulfur dioxide released.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Dust Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve (100 g) in 5 litres water and flush to foul water drain.

EEC. NO. 231-821-4

SODIUM SULFITE

Harmful Effects

Ingestion of large amounts may cause nausea, convulsions. Irritant to eyes. In fire fumes of sulfur dioxide released.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Dust Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve (100 g) in 5 litres water and flush to foul water drain.

EEC. NO. 212-773-2

SODIUM TARTRATE

Harmful Effects

May be harmful by ingestion, eye irritant. When heated to decomposition toxic fumes of carbon monoxide released.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Dissolve small quantity (50 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 2331-867-5

SODIUM THIOSULFATE

Harmful Effects

Irritant to eyes, toxic fumes of oxide and sulfur dioxide in fire.

Dangerous Reaction with:

Nitrite, metal nitrates, acids (which produce sulfur dioxide).

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (25 g) in water (5 litres) and flush to foul water drain.

STARCH IODIDE PAPER

Disposal: Put in refuse bin if a small quantity is involved.

EEC. NO. 232-679-6

STARCH POWDER/TABLETS

Harmful Effects

Dust may irritate eyes and lungs.

Dangerous Reaction with:

Oxidisers.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Swallowed: Rinse mouth. Drink water (500 cm^3).

Disposal: Mix a small quantity (50 g) with sand (1 kg) and put in refuse bin.

EEC. NO. 233-131-9

STRONTIUM NITRATE

Harmful Effects

A strong oxidising agent which must be separated from combustibles.

Oxidising

Dangerous Reaction with:

Aluminium, magnesium, potassium, sodium and other metals as explosive mixtures form. Combustibles including organic chemicals, ammonium salts, cyanides, sulfides, thiosulfates and ethanoates. Explosive mixtures are formed.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Remove contaminated clothing. Wash with water for 10 minutes. Seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance.

Disposal: Dissolve a small quantity (100 g) in water (10 litres) and flush to foul water drain.

EEC. NO. 231-722-6

SULFUR

Harmful Effects

Sulfur dust irritates eyes and lungs. Upon burning toxic fumes of sulfur dioxide produced.

Dangerous Reaction with:

Alkali metals, zinc, magnesium, aluminium, oxidising agents, metal oxides.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Dust Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Mix small amounts (100 g) with 1 kg sand and dispose in refuse bin.

EEC. NO. 231-195-2

SULFUR DIOXIDE

Toxic

Harmful Effects

Toxic by inhalation. Severe eye and respiratory irritant. A choking gas which will cause injury if exposure is excessive - conjunctivitis and bronchitis. To be avoided by persons with respiratory disorders. May provoke asthma.

Dangerous Reaction with:

Will react with water or steam to produce toxic and corrosive fumes; hydrogen, metal oxides, potassium chlorate.

First Aid:

Eye Contact: Wash with gentle flow of assistance.

Inhalation: Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.

Disposal: If cylinder is leaking place in fume cupboard and discharge at a slow rate (over a day) until exhausted. Ensure that the fume cupboard is fume free and exhausts to a safe point to avoid re-entry of fumes.

EEC. NO. 231-639-5

SULFURIC ACID

Corrosive

Harmful Effects

[Reference to class 2 carcinogen -DELETED 10/12/02]

Severe burn on skin contact.

Dangerous Reaction with:

Water, vigorous reaction may eject contents if water is added, hydrochloric acid, chlorides - hydrogen chloride released, chlorates, manganates (VII) – explosive products. Metals – dangerous reactions may occur. To avoid burns add the concentrated acid slowly to cold water. Never add water or ice to the acid. Stir well.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Remove contaminated clothing. Wash with water for 10 minutes. If blisters occur, seek medical assistance.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Add (100 cm^3) to 5 litres water while stirring. Add anhydrous sodium carbonate until neutralisation and flush down foul water drain with excess water.

EEC. NO. 200-156-3

1,1,1-TRICHLOROETHANE

Harmful

Dangerous to the Environment

Harmful Effects

Anaesthetic, inhaling a high quantity may cause irregular heartbeat and cardiac arrest. Vapour may form a poison gas, phosgene, if exposed to a high temperature (such as in smoking), skin degreasing agent, severe eye irritant. Damages ozone layer.

Dangerous Reaction with:

Aluminium, magnesium, sodium, potassium, lithium - violent reaction may occur.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with soap and water for 10 minutes.
Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance.
Disposal:	Small and large quantities should be disposed of by a licensed EPA Approved Chemical Waste Disposal Contractor.

EEC. NO. 200-315-5

UREA

Harmful Effects

May be harmful by ingestion, skin irritant.

Dangerous Reaction with:

Sodium nitrate, perchlorate.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3).
Disposal:	Dissolve small quantity (10 g) in water (5 litres) and flush to foul water drain.

EEC. NO. 222-477-6

ZINC CARBONATE

Harmful Effects

Dust may irritate eyes and lungs.

Irritant

Dangerous Reaction with:

Acids.

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water for 10 minutes.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance if more than 1 gram.

Disposal: Mix small quantity (50 g) with excess sand (1 kg) and put in refuse bin.

EEC. NO. 215-222-5

ZINC OXIDE

Harmful Effects

A skin and eye irritant. Fresh fumes of zinc oxide cause metal fume fever,

Dangerous Reaction with:

Violent reaction with magnesium, linseed oil, chlorinated rubber,

First Aid:

Eye Contact: Wash with gentle flow of water for 15 minutes. Seek medical assistance.

Skin Contact: Wash with water.

Fume Inhalation: Remove to fresh air, If breathing affected or any history of respiratory disease, seek medical assistance.

Swallowed: Rinse mouth. Drink water (500 cm^3). Seek medical assistance if more than 1 gram.

Disposal: Mix a small quantity (50 g) with sand (2 kg) and place in refuse bin.

EEC. NO. 231-175-3

ZINC POWDER

Flammable

Harmful Effects

This dust is flammable and releases hydrogen upon contact with water. Moist dust may ignite spontaneously.

Dangerous Reaction with:

Water, alkaline solutions, iodine, manganese oxide, potassium chlorate.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Dust Inhalation:	Remove to fresh air. If breathing affected or any history of respiratory disease, seek medical assistance.
Swallowed:	Seek medical attention.
Disposal:	Add slowly in small amounts (50 g) to excess dilute hydrochloric acid. Run to foul water drain with excess water.

EEC. NO. 231-793-3

ZINC SULFATE

Irritant

Dangerous to the environment

Harmful Effects

Ingestion of large amounts may cause nausea, convulsions. Irritant to eyes. In fire fumes of sulfur dioxide released. Do not breathe dust, avoid contact with the eyes.

First Aid:

Eye Contact:	Wash with gentle flow of water for 15 minutes. Seek medical assistance.
Skin Contact:	Wash with water.
Swallowed:	Rinse mouth. Drink water (500 cm^3). Seek medical assistance if more than 1 g.
Disposal:	Dissolve (100 g) in water (5 litres) and flush to foul water drain.

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