TABLE 320

ALIPHATIC AMINES

General Information

These chemicals are severe irritants of the skin and lungs. Allylamine is particularly toxic

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be severe redness, irritation and pain. Chemical burns can occur with many of these chemicals.	**Skin Contact** Emergency Treatment. see 8.1.
Eye Contact There may be severe irritation and redness, followed by blurring of vision. This is due to swelling of the linings of the eye (corneal oedema). Chemical burns can occur	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment see 8.2. Corneal oedema: this should improve within 4 hours if the casualty is removed from exposure. If there is no improvement, **RADIO FOR MEDICAL ADVICE.**
Inhalation There may be flushing of the face, nausea, dizziness and headache. There will be shortness of breath and a cough. In severe cases, breathlessness with frothy sputum (pulmonary oedema) can occur. Bronchitis can develop 24 to 48 hours after exposure. There may also be confusion, loss of consciousness and rarely convulsions.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Bronchitis: see 6.1.3. Convulsions: see 6.3.2.
Ingestion There will be nausea and vomiting. In severe cases, there may be blood in the vomit. Mental confusion, unconsciousness and convulsions may occur.	**Ingestion** Emergency Treatment: see 8.4. Bleeding: see 6.4.3. Convulsions: see 6.3.2.

TABLE 321

DIMETHYL FORMAMIDE

General Information

This chemical is an irritant, but may be severely toxic to the liver in high concentration.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be irritation and redness. It may be absorbed through the intact skin causing liver damage.	**Skin Contact** Emergency Treatment: see 8.1. Liver failure: see 6.4.5.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation There may be mild shortness of breath with flushing of the face. In severe cases, liver failure can occur as a late complication after 2 or 3 days.	**Inhalation** Emergency Treatment: see 8.3. Liver failure: see 6.4.5.
Ingestion This is unlikely to occur, but there may be nausea and vomiting. Liver failure can occur in severe cases.	**Ingestion** Emergency Treatment: see 8.4. Liver failure: see 6.4.5.

TABLE 322

MORPHOLINE

General Information

This chemical is a severe irritant of the skin and lungs. The casualty should be observed for at least 72 hours after exposure, since there may be a delayed onset of symptoms.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be severe irritation and redness. Chemical burns can occur.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation, followed by blurring of vision. This is due to swelling of the linings of the eye (corneal oedema). Chemical burns can occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED** Emergency Treatment: see 8.2. Corneal oedema: this should improve spontaneously within 4 hours if the casualty is removed from exposure. If there is no improvement, **RADIO FOR MEDICAL ADVICE.**
Inhalation There may be burning of the mouth and throat with shortness of breath. In severe cases this may be associated with frothy sputum (pulmonary oedema), which can develop at any time up to 72 hours after exposure.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2.
Ingestion There may be severe nausea and vomiting with burns of the mouth and throat. Liver and kidney failure may occur.	**Ingestion** Emergency Treatment: see 8.4. Liver failure: see 6.4.5. Kidney failure: see 6.5.1.

TABLE 323

ACRYLAMIDE

General Information

This chemical is toxic to the nervous system. The signs and symptoms as described below may develop slowly over a few days after exposure. The patient should be transferred ashore for further care, since he can take some time to improve.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation. It is absorbed through the intact skin producing similar signs to those of inhalation (see below)	**Skin Contact** Emergency Treatment. see 8.1
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In mild cases, there will be nausea, drowsiness and lethargy. In more severe cases, there may be weakness of the arms and legs, with tingling in the extremities. There may be difficulty in walking. Hallucinations may occur. In some cases, a particular feature is increased sweating, and loss of the skin of the palms of the hands	**Inhalation** Emergency Treatment: see 8.3.
Ingestion There may be nausea and vomiting. Symptoms similar to inhalation can occur (see above).	**Ingestion** Emergency Treatment. see 8.4

TABLE 325

PYRIDINES

General Information

These chemicals are toxic to the nervous system, the liver and the kidneys

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact Mild irritation may occur They are absorbed through the intact skin producing symptoms similar to inhalation (see below).	**Skin Contact** Emergency Treatment see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation There may be nausea, headache, giddiness, anxiety and vomiting Drowsiness and unconsciousness can develop in some cases.	**Inhalation** Emergency Treatment: see 8.3.
Ingestion This produces similar signs to inhalation (see above) In severe cases liver failure and kidney failure may occur.	**Ingestion** Emergency Treatment: see 8.4 Liver failure: see 6.4.5. Kidney failure: see 6 5 1

TABLE 330

ALIPHATIC AND AROMATIC ESTERS AND ETHERS

General Information

These chemicals vary in their severity of toxic effects. They are mainly irritants, but also cause depression of the nervous system.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation with blisters.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In mild cases, there will be a cough, irritation of the mouth and throat, occasionally with chest pain. In more severe cases, there may be confusion, drowsiness and loss of consciousness. Convulsions can occur. Shortness of breath with frothy sputum (pulmonary oedema) is a rare complication. Bronchitis may develop after one to two days.	**Inhalation** Emergency Treatment: see 8.3 Pulmonary oedema: see 6.1.2. Convulsions: see 6.3.2. Bronchitis: see 6.1.3 Mental confusion: see 6.3.3.
Ingestion This is unlikely to occur, but can cause nausea and vomiting with abdominal pain. Mental confusion and unconsciousness may occur. Kidney failure is a rare complication.	**Ingestion** Emergency Treatment: see 8.4. Kidney failure: see 6.5.1. Mental confusion: see 6.3.3

TABLE 331

CAMPHOR OIL

General Information

This is a highly toxic compound if ingested. Small quantities have been reported to cause symptoms. It is not particularly toxic to the skin or eyes.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact Irritation and redness may occur with high concentrations.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact Mild irritation and redness may occur.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation There may be sneezing, watering of the eyes and a cough on mild exposure. More severe exposure can result in confusion, headaches, twitching of the muscles, unconsciousness and convulsions.	**Inhalation** Emergency Treatment: see 8.3. Convulsions: see 6.3.2. Mental confusion: see 6.3.3.
Ingestion There may be nausea and vomiting with confusion and drowsiness. Severe cases will have a rapid onset of unconsciousness and convulsions.	**Ingestion** Emergency Treatment: see 8.4. Convulsions: see 6.3.2. Mental confusion: see 6.3.3. Give two sachets (10 g) of activated charcoal dispersed in 500 ml (one pint) of water, followed by three doses of one sachet (5 g) in 100 ml of water at intervals of 20 minutes. **RADIO FOR MEDICAL ADVICE.**

TABLE 335

AMINO AND NITRO COMPOUNDS OF THE AROMATIC SERIES

General Information

These chemicals are toxic to the blood cells. Aniline and Nitrobenzene are particularly toxic.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation. They are absorbed through the intact skin causing symptoms similar to those of inhalation and ingestion (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion There will be nausea, vomiting, pain in the chest, and weakness. There may be blueness of the ear lobes and lips with shortness of breath. In severe cases, there will be deep blueness of the lips, gums, tongue or face caused by damage to the blood cells (methaemoglobinaemia). This causes asphyxia. There may be drowsiness, loss of consciousness and rarely convulsions. Liver failure can occur 2 to 3 days after exposure.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4. Convulsions: see 6.3.2. Liver failure: see 6.4.5. Asphyxia: see 6.1.1. **Methaemoglobinaemia** If symptoms occur as described, and **the patient is conscious**, give 20 ml of methylene blue 1% by mouth. Also give 1 g of ascorbic acid by mouth, and repeat every 4 hours for 24 hours. **If the patient is unconscious,** give 5 ml of 10% ascorbic acid intramuscularly.

TABLE 340

CHLORINATED HYDROCARBONS

General Information

These chemicals vary in their degree of toxicity. They may be irritant to the skin and lungs.

They are also absorbed into the body causing depression of the nervous system and some may cause damage to the liver.

Prolonged exposure to these chemicals may cause long term effects.
They may produce highly toxic fumes of **Phosgene** (Table 600) if they are involved in a fire.

The following chemicals are extremely toxic and may cause death: Methyl chloride, Allyl chloride, Chloroform, Ethylene dichloride, Carbon tetrachloride, Pentachloroethane, and Tetrachloroethane.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation. Chemical burns can occur with some of these chemicals. They can be absorbed through the intact skin causing symptoms similar to inhalation (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and severe irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In mild cases there may be a cough, sneezing and slight breathlessness. In more severe cases, this may be followed by drowsiness, headache, nausea, vomiting and diarrhoea. Severe shortness of breath with frothy sputum (pulmonary oedema) can occur. The patient may become drowsy, unconscious and occasionally develop convulsions. Liver failure and kidney failure may occur after 2 or 3 days.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Convulsions: see 6.3.2. Liver failure: see 6.4.5. Kidney failure: see 6.5.1.
Ingestion There may be nausea, vomiting, abdominal pain and headache. Drowsiness and unconsciousness may develop, convulsions can occur. Liver and kidney failure may occur 2 or 3 days after exposure.	**Ingestion** Emergency Treatment: see 8.4. Convulsions: see 6.3.2. Liver failure: see 6.4.5. Kidney failure: see 6.5.1.

TABLE 345

BROMINATED, IODINATED AND FLUORINATED HYDROCARBONS

General Information

These chemicals vary in their degree of toxicity. They act on the nervous system, and are irritants of the skin and lungs. They may cause damage to the liver.

The following chemicals are extremely toxic, and may cause death: Methyl bromide, Methyl bromide mixtures, Chloropicrin and methyl bromide mixtures, Allyl iodide, Ethylene dibromide, Bromoform, Tetrabromoethane, Methyl iodide and Carbon tetrabromide.

Note: The symptoms may be delayed in onset from 30 minutes to three days after exposure.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation. They are absorbed through the intact skin causing symptoms similar to those of inhalation and ingestion (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In low concentrations, mild shortness of breath with a cough may occur. In high concentrations, there may be severe breathlessness with frothy sputum (pulmonary oedema). Many of these chemicals are absorbed through the lungs producing drowsiness and an unsteady walk. In severe cases, there may be muscle twitching, trembling of the tongue and fingers, slurred speech, misty vision and dilated pupils. Unconsciousness may follow and occasionally convulsions. Liver and kidney failure can also occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Convulsions: see 6.3.2. Liver failure: see 6.4.5. Kidney failure: see 6.5.1.
Ingestion There may be nausea and vomiting, and signs similar to those of inhalation may occur.	**Ingestion** Emergency Treatment: see 8.4.

TABLE 350

FLUORINATED HYDROCARBONS - REFRIGERANTS

General Information

These chemicals are dangerous because they displace oxygen causing asphyxia. They also cause unconsciousness in high concentrations.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be pain and redness. If there is a persistent white area, frost-bite has occurred.	**Skin Contact** Emergency Treatment: see 8.1. Frost-bite: see 6.8.
Eye Contact There may be mild irritation and occasionally redness.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In low concentrations, there may be mild shortness of breath and a cough. High concentrations cause a headache, nausea, drowsiness and unconsciousness.	**Inhalation** Emergency Treatment: see 8.3.
Ingestion This is unlikely to occur. Nausea and vomiting with frost-bite of the mouth and throat might be expected.	**Ingestion** Emergency Treatment: see 8.4. If frost-bite of the throat is suspected, give warm drinks. **RADIO FOR MEDICAL ADVICE.**

TABLE 355

TRICRESYLPHOSPHATE

General Information

This chemical is toxic to the nervous system. It is unusual because the development of symptoms described below may not appear for up to 28 days after exposure. Personnel, who have been exposed, must be transferred ashore for medical advice. In addition, they should not return to sea until they have been given clearance to do so by a doctor who has been adequately informed of the circumstances of the accident.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be mild irritation. It is absorbed through the intact skin, producing symptoms similar to ingestion and inhalation (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion At first, there may be nausea, vomiting and diarrhoea, which usually subsides after 2 or 3 days. After apparent recovery, there may be a delay of up to one month, after which, sharp "cramp-like" pains and pins and needles in the arms and legs may occur. This may be followed by numbness of the same areas. In severe cases, weakness of the muscles occurs with difficulty in breathing.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4.

TABLE 360

ALIPHATIC SILICATES

General Information

These chemicals are severe irritants in high concentrations. They may also cause damage to the kidneys and liver.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be irritation and redness.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be severe irritation and redness.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation Mild exposure may only produce irritation of the mouth and throat. In more severe cases, there is shortness of breath, drowsiness and trembling of the hands. Severe breathlessness with frothy sputum (pulmonary oedema) may occur. Liver and kidney failure may occur as late complications.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Liver failure: see 6.4.5. Kidney failure: see 6.5.1.
Ingestion There may be nausea and vomiting. In severe cases, drowsiness and mental confusion can occur. Liver and kidney failure may occur.	**Ingestion** Emergency Treatment: see 8.4. Liver failure: see 6.4.5. Kidney failure: see 6.5.1. Mental confusion: see 6.3.3.

TABLE 365

ALIPHATIC OXIDES

General Information

These chemical substances are toxic to the nervous system, liver and kidneys. They are also severe irritants of the skin and lungs. The main hazard is from inhalation since they are liquids only at low temperatures.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be redness and severe irritation. Chemical burns may occur with blistering. Frost-bite may occur.	**Skin Contact** Emergency Treatment: see 8.1. Frost-bite: see 6.8.
Eye Contact There will be severe redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation Immediate effects are usually a sore throat, a peculiar taste in the mouth with nausea and mild shortness of breath. In severe cases there may be a delayed onset of nausea, vomiting, shortness of breath with frothy sputum (pulmonary oedema), drowsiness, muscular weakness and unconsciousness. These can occur up to 3 days after exposure. Liver and kidney damage may follow; death can occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Liver failure: see 6.4.5. Kidney failure: see 6.5.1. **RADIO FOR MEDICAL ADVICE.**
Ingestion This is unlikely to occur but if it does there may be severe nausea and vomiting with unconsciousness.	**Ingestion** Emergency Treatment: see 8.4.

TABLE 370

ISOCYANATES

General Information

These chemicals are strong irritants of the skin and lungs. They are not severely toxic, but may produce symptoms similar to asthma* if inhaled.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There will be redness and irritation, which can be severe.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In low concentrations, there may be sneezing, mild shortness of breath and a cough. In more severe cases, there is often an interval of a few hours before the onset of shortness of breath, wheezing and in rare cases, breathlessness with frothy sputum (pulmonary oedema). In a few cases, these symptoms may occur immediately. Bronchitis may occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Bronchitis: see 6.1.3. **Wheezing** – give 2 puffs of a salbutamol inhaler together with one aminophylline suppository inserted into the back passage. If the wheezing persists give a further 2 puffs of the salbutamol inhaler every two hours. **RADIO FOR MEDICAL ADVICE.**
Ingestion There will be nausea and vomiting with mild abdominal pain. No other severe symptoms usually occur.	**Ingestion** Emergency Treatment: see 8.4.

* Asthma is a condition characterized by a sudden onset of shortness of breath and wheezing which responds within 5 minutes to treatment with a Salbutamol inhaler.

TABLE 375

MERCAPTANS

General Information

These chemicals are toxic to the nervous system. They are irritants of the mouth, throat and lungs. They have a strong unpleasant odour.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There will be redness and irritation, with profuse watering of the eyes.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation At low concentrations, there is often a cough, mild shortness of breath, and irritation of the mouth and throat. There may be dizziness and mental confusion. Bronchitis may occur after 24 to 36 hours. In more severe cases, with higher concentrations, breathlessness with frothy sputum (pulmonary oedema) can occur. The patient will become unconscious, and breathing may stop. Convulsions may be a complication.	**Inhalation** Emergency Treatment: see 8.3. Bronchitis: see 6.1.3. Pulmonary oedema: see 6.1.2. Convulsions: see 6.3.2. Mental confusion: see 6.3.3.
Ingestion This is unlikely to occur, but if it does will produce nausea and vomiting, followed by unconsciousness if sufficient has been ingested. Convulsions may occur.	**Ingestion** Emergency Treatment: see 8.4. Convulsions: see 6.3.2.

TABLE 376

PERCHLOROMETHYL-MERCAPTAN

General Information

This chemical is an extremely toxic liquid, which readily gives off fumes and has a strong unpleasant odour. It is a severe irritant of the lungs when inhaled, and may be absorbed causing damage to the liver and kidneys. Death may occur.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness, irritation and blisters. Chemical burns can occur.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There will be severe redness and irritation, with profuse watering of the eyes.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation Low concentrations will produce irritation of the mouth and throat, with a feeling of weakness, muscle pains, a slight temperature, mild shortness of breath and a cough. High concentrations will result in severe breathlessness, often with frothy sputum (pulmonary oedema), painful breathing with a cough, vomiting and a rapid pulse. Liver failure and kidney failure may occur as late complications.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Liver failure: see 6.4.5. Kidney failure: see 6.5.1.
Ingestion There will be nausea and vomiting with abdominal pain. Liver failure and kidney failure can occur.	**Ingestion** Emergency Treatment: see 8.4. Liver failure: see 6.4.5. Kidney failure: see 6.5.1.

TABLE 500

ORGANOCHLORINE PESTICIDES

General Information

These chemicals may vary in their degree of toxicity, a few of which are extremely dangerous, particularly after ingestion. They act on the nervous system and may cause death.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be mild irritation. They are absorbed through the intact skin causing signs similar to those of inhalation and ingestion (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion There may be a delay of up to 10 hours before symptoms develop. In many cases, this may be the sudden onset of convulsions followed by a period of unconsciousness. These may be frequent and result in death. The majority of cases, however, recover, but may have dizziness, general muscular weakness and lethargy for some weeks afterwards. Other symptoms that occur initially are nausea, vomiting, headache, muscle twitching, disturbance of vision and abdominal pain. Liver damage may rarely occur.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4 Convulsions: see 6.3.2. If the patient has ingested the chemical and is still conscious, give 2 sachets (10 g) of activated charcoal in 500 ml (one pint) of **water immediately.** Follow with three doses of one sachet (5 g) in 100 ml of water at 20 minute intervals. Liver failure: see 6.4.5.

TABLE 505

ORGANOPHOSPHORUS AND CARBAMATE PESTICIDES

General Information

These chemicals are extremely toxic to the nervous system. They block the mechanism which stimulates muscles, and may also damage the brain. Death may occur.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be mild redness and irritation. Absorption through the intact skin can cause symptoms and signs similar to those of inhalation and ingestion (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be mild redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion The first symptoms are usually loss of appetite, headache, exhaustion, weakness and confusion. These effects may be experienced during exposure or up to 12 hours later. Vomiting, cramp-like abdominal pains, excessive cold sweating and salivation may follow. The pupils of the eyes are small and tightness in the chest with difficulty in breathing may be experienced. The pulse rate may become slow (30–40 per minute). There may be twitching of the muscles, particularly of the face and tongue. In severe cases, convulsions and unconsciousness can occur. Death may follow.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4. Convulsions: see 6.3.2. Mental confusion; see 6.3.3. If symptoms as described develop, give atropine sulphate one mg intramuscularly every 15 minutes until the mouth becomes dry, and one or more of the following occur: - the pupils become large - the pulse becomes normal (70–80 per minute) - the convulsions stop - the breathing improves. **DO NOT GIVE MORE THAN** ten injections in total, each of one mg, without further radio medical advice.

TABLE 506

DITHIOCARBAMATES

General Information

These chemicals are toxic to the nervous system. If exposure has occurred, do **NOT** give alcohol since this may increase the toxic effects.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact Mild irritation may occur. It can be absorbed through the intact skin causing similar symptoms to those of inhalation and ingestion (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be mild redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion In low concentrations, there will be a headache with drowsiness. In more severe cases, confusion, mental agitation, unconsciousness and rarely convulsions may develop. In a few cases, there may be a skin rash and blurring of vision. Weakness of the arms and legs with numbness may occur.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4. Convulsions: see 6.3.2. Mental confusion: see 6.3.3. **RADIO FOR MEDICAL ADVICE.**

TABLE 510

PHENOXYL PESTICIDES

General Information

These chemicals are toxic to the nervous system. In high concentrations, they may also damage the liver and kidneys. The most serious effects occur after ingestion.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be mild irritation and redness.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be mild irritation and redness.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion There may be an increase in salivation, abdominal pain, nausea, vomiting and diarrhoea. In more severe cases, there will be drowsiness, slurred speech, jerking of the muscles, mental confusion and progressive unconsciousness. Convulsions can occur.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4. Convulsions: see 6.3.2. Mental confusion: see 6.3.3.

TABLE 515

NITROPHENOL PESTICIDES

General Information

These are an extremely toxic group of chemicals. They have a general action on the whole body. Death may occur.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and pain. They are absorbed through the intact skin causing toxic symptoms similar to those of inhalation and ingestion (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness, irritation and pain.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion The patient may be well at first, but then develops restlessness, anxiety, flushed skin, rapid breathing and nausea. The patient may have a high temperature and a rapid pulse, with profuse sweating. In severe cases, there is often profound weakness, blue discoloration of the skin and progressive unconsciousness. Liver failure can occur.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4. High temperature: (see 6.6). Liver failure: see 6.4.5. **Note:** If the patient has a high temperature of over 40°C, efforts should be made to lower it by use of a fan, cold sponging and ice packs. If he is conscious give frequent cold drinks. Do **NOT** give alcohol.

TABLE 520

PHENYL UREA PESTICIDES

General Information

These chemicals are irritants to the skin and lungs.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be severe redness, irritation and occasionally pain	**Skin Contact** Emergency Treatment. see 8.1
Eye Contact There may be severe redness and pain	**Eye Contact** Emergency Treatment: see 8 2.
Inhalation and Ingestion There may be vomiting, diarrhoea, shortness of breath and blueness of the skin In severe cases, particularly following inhalation, breathlessness with frothy sputum (pulmonary oedema) may develop If shortness of breath persists over several days. it is possible that fluid has accumulated around the outside of the lungs This is called a pleural effusion Liver failure may also occur.	**Inhalation and Ingestion** Emergency Treatment: see 8 3 and 8.4. Pulmonary oedema: see 6.1.2. Pleural effusion see 6 1 5 If pleural effusion is suspected **RADIO FOR MEDICAL ADVICE.** Liver failure see 6.4 5.

TABLE 525

BIPYRIDILIUM PESTICIDES

General Information

These chemicals, particularly *Paraquat* are extremely toxic if ingested. The onset of symptoms may be delayed, and prolonged over a few days. They are moderately severe irritants to the skin and lungs. They are absorbed through the intact skin, but they do not cause the severe toxicity that follows ingestion. If ingestion has occurred, the patient should be transferred ashore as soon as possible.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be severe irritation, pain, redness and blistering. Absorption through the intact skin can occur causing nausea and vomiting.	**Skin Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment see 8.1 Persistent vomiting see 6 4 2.
Eye Contact There may be severe irritation and pain with redness. Chemical burns can occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.2.
Inhalation There will be shortness of breath with a cough and soreness of the throat In severe cases, breathlessness with frothy sputum (pulmonary oedema) may occur.	**Inhalation** Emergency Treatment: see 8.3 Pulmonary oedema: see 6.1.2.
Ingestion There will be soreness of the mouth and throat, and difficulty in swallowing Vomiting, diarrhoea and abdominal pain may follow Liver failure and kidney failure may develop after 2 or 3 days. In severe cases, shortness of breath occurs after five to 10 days, which progresses to asphyxia, unconsciousness and death.	**Ingestion** Give two sachets (10 g) of activated charcoal in 500 ml (one pint) of water immediately. Follow with three doses of one sachet (5 g) in 100 ml of water at intervals of 20 minutes. Emergency Treatment. see 8 4. Asphyxia: see 6.1.1. Kidney failure: see 6 5.1. Liver failure. see 6.4.5.

TABLE 530

MISCELLANEOUS PESTICIDES

TRIAZINE PESTICIDES

BENZOIC DERIVATIVE PESTICIDES

PHTHALIMIDE PESTICIDES

General Information

This group of pesticides are of low toxicity, and have not been reported to cause any serious symptoms.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact No symptoms are likely to occur.	**Skin Contact** Emergency Treatment: see 8.1
Eye Contact No symptoms are likely to occur.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation No symptoms are likely to occur	**Inhalation** Emergency Treatment see 8.3.
Ingestion Mild drowsiness may occur.	**Ingestion** Emergency Treatment see 8.4 The patient should rest quietly for 24 hours and be observed for any abnormal symptoms. **RADIO FOR MEDICAL ADVICE** should any symptoms occur

TABLE 535

RODENTICIDES

General Information

There are many rodenticides some of which contain heavy metals. These must be declared prior to carriage in order to identify the composition Some of these compounds are composed of, or contain Warfarin, which is a drug that causes bleeding It is toxic only when ingested in large quantities.

SIGNS AND SYMPTOMS	TREATMENT
Ingestion There may be a burning sensation of the skin, nose bleeds and rarely vomiting of blood. The first sign may be blood passed in the urine or the faeces.	If these signs occur, give Vitamin K_1 10 mg intramuscularly. If further bleeding occurs in the following 24 hours give another dose of Vitamin K_1 10 mg intramuscularly and **RADIO FOR MEDICAL ADVICE.** Internal bleeding: see 6 4.3.

TABLE 540

FLUOROACETATES AND CHLOROACETATES

General Information

These chemicals are highly toxic and have a general action on the whole body. They particularly affect the nervous system and heart. Death can occur.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation. Absorption through the intact skin can occur producing symptoms similar to those of ingestion (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In low concentrations, there will be mild shortness of breath only. In severe cases, this may be worse, and can be associated with frothy sputum (pulmonary oedema). Other symptoms may occur similar to those of ingestion (see below).	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2.
Ingestion There may be a delay of 30 minutes to 2 hours before symptoms develop. These include, nausea, vomiting, anxiety, muscle twitching, confusion and unconsciousness. Convulsions can occur. The pulse may become rapid and irregular, and circulatory collapse can occur. Breathlessness with frothy sputum (pulmonary oedema) may develop suddenly. Kidney failure may occur as a late complication.	**Ingestion** Emergency Treatment: see 8.4. Convulsions: see 6.3.2. Circulatory collapse: see 6.2.1. Pulmonary oedema: see 6.1.2. Kidney failure: see 6.5.1. Mental confusion: see 6.3.3.

TABLE 545

ORGANOTIN PESTICIDES

General Information

These chemicals vary in their degree of toxicity. Some are toxic to the nervous system, whereas others are only irritants.

SIGNS AND SYMPTOMS	TREATMENT
Skin and Eye Contact There may be redness and irritation.	**Skin Contact** Emergency Treatment: see 8.1 **Eye Contact** Emergency Treatment see 8.2.
Inhalation and Ingestion There may be mild shortness of breath with a cough and sore throat. Nausea and vomiting can occur. In severe cases the onset of symptoms may be delayed for 2 to 4 days. There may be weakness, an irregular pulse, difficulty in breathing, convulsions, and unconsciousness Death may occur.	**Inhalation and Ingestion** Emergency Treatment: see 8 3 and 8 4 Convulsions: see 6.3.2. **RADIO FOR MEDICAL ADVICE**

TABLE 550

FUMIGANTS

General Information

Fumigation of cargoes or cargo spaces must be carried out only by qualified operators.*

The main fumigants used are:

1	Methyl bromide	Table 345
2	Hydrogen cyanide	Table 645
3	Hydrogen phosphide	Table 601
4	Methyl bromide and carbon dioxide	Tables 345 and 615
5	Carbon dioxide and nitrogen	Table 615

* Refer to IMO Publication "Recommendations on the Safe Use of Pesticides in Ships (Revised 1980)

TABLE 600

PHOSGENE

General Information

This is a highly toxic gas, which acts mainly on the lungs. There may be no warning odour of its presence, however, there may be a smell of rotting hay. There may be an interval of several hours after exposure before the onset of symptoms. It may be formed from many of the Chlorinated hydrocarbons (Table 340) in a fire.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be severe irritation and redness. Painful burns can occur.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be severe irritation and redness. Chemical burns can occur.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation Immediately after exposure, there is usually a dryness in the throat, vomiting and shortness of breath. These may improve after a few hours. In more severe cases there will initially be severe irritation of the throat and mouth. A period of up to 48 hours may pass before the onset of further symptoms. At first there will be a headache, weakness and a painful cough. This is followed by severe shortness of breath with frothy sputum, (pulmonary oedema), and blueness of the skin. Loss of consciousness and death may follow.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2.

TABLE 601

PHOSPHINE

General Information

This is a highly toxic gas. It has a general action on the whole body. It has a garlic-like odour.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation At low concentrations, there may be nausea, vomiting, diarrhoea, chest tightness and headache. Difficulty in breathing and drowsiness may occur. In severe cases, these symptoms occur, but are followed by severe difficulty in breathing with frothy sputum (pulmonary oedema) unconsciousness and on rare occasions, convulsions. **Note**: The onset of pulmonary oedema may be delayed for up to 72 hours.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Convulsions: see 6.3.2.

TABLE 605

ARSINE

General Information

This is an extremely toxic gas, which causes severe damage to the blood and kidneys. It does not have any odour to act as a warning of its presence. It is released when acid or water comes into contact with Arsenic or Ferrosilicon compounds. The patient should be transported ashore as soon as possible.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be mild irritation.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be mild irritation and redness.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation There is usually a delay of 2 to 24 hours after exposure before the onset of symptoms. The patient may have a garlic odour on the breath after exposure. There may be nausea, vomiting, dizziness, weakness and headache. Abdominal pain and diarrhoea may develop. In severe cases, the first sign is often red urine which develops after 4 to 6 hours becoming brown later. The blood cells are damaged, and the skin becomes yellow, (jaundice) over a period of 24 to 48 hours. Kidney failure may then occur. Liver failure is a rare complication. There may be severe shortness of breath with frothy sputum (pulmonary oedema). The patient can become mentally agitated. He may also develop weakness and numbness in the arms and legs a few days after exposure.	**Inhalation** Emergency Treatment: see 8.3. The patient should be transferred ashore as soon as possible. Pulmonary oedema: see 6.1.2. Kidney failure: see 6.5.1. Liver failure: see 6.4.5. Mental agitation: see 6.3.3.

TABLE 606

STIBINE. GERMANE

General Information

These are highly toxic gases, which cause severe damage to the blood and kidneys. Stibine is released by the action of water or acid on Antimony or Ferrosilicon compounds. Germane is a similar gas in its action. If severe symptoms occur, the patient should be transferred ashore as soon as possible. At low concentrations there is no warning smell of their presence.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation At low concentrations, there will be a cough with shortness of breath. Symptoms may not occur until 3 to 24 hours after exposure. There may be a garlic odour on the breath. At first, nausea, dizziness, vomiting and weakness occur. In severe cases, breathlessness with frothy sputum (pulmonary oedema) may follow. Damage of the blood cells can develop giving the skin a yellow colour, and turning the urine dark brown. Kidney and liver failure can occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Kidney failure: see 6.5.1. Liver failure: see 6.4.5. The patient should be transferred ashore as soon as possible.

TABLE 610

NITROGEN OXIDES

General Information

These gases are highly toxic to the lungs. Some of them also have an irritant action. At low concentrations, there is no warning of their presence, but in higher concentrations, there may be a pungent odour. Compounds are included in this table which are capable of producing Oxides of nitrogen

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation At low concentrations, there may be chest pain with shortness of breath and a cough. Bronchitis can occur. More severe exposure may result in dangerous symptoms, which can occur in 2 stages; first there may only be increasing shortness of breath with a cough, that improves over a period of up to 3 weeks. The patient may then develop a severe relapse with fever, breathlessness with frothy sputum (pulmonary oedema) and blueness of the skin. However, pulmonary oedema may occur at any time up to 3 weeks after exposure without any previous symptoms. In very severe cases, pulmonary oedema can occur within a few hours after exposure.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Bronchitis. see 6.1.3. The patient should be transferred ashore for observation. He should not return to sea within 3 weeks after exposure, and medical clearance should be obtained. **RADIO FOR MEDICAL ADVICE**

TABLE 615

CARBON DIOXIDE

General Information

This gas is dangerous because it displaces air and causes asphyxia. It is produced in large quantities by fires. It has no warning smell of its presence. Carbon dioxide may be transported in liquid or solid forms at very low temperature and is used as "Dry Ice".

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact The gas is not toxic to the skin. The solid and liquid forms may produce frost-bite if they come into contact with the skin.	**Skin Contact** Frost-bite see 6.8.
Eye Contact The gas does not produce any symptoms.	**Eye Contact** None.
Inhalation There may be increased deep breathing, a rapid pulse, headache, agitation, drowsiness and weakness. Higher concentrations will produce unconsciousness, and convulsions may occur. The lips, hands and skin may be blue.	**Inhalation** **IMMEDIATELY REMOVE FROM EXPOSURE.** Give oxygen: see 8.3 1. Emergency Treatment: see 8.3. Convulsions: see 6.3.2.

TABLE 616

CARBON MONOXIDE

General Information

This gas is highly toxic because it replaces oxygen in the blood. In severe cases, the patient should be transferred ashore, since damage of the nervous system may develop up to 2 weeks after exposure.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin and Eye Contact This gas is not toxic to either the skin or the eyes.	**Skin and Eye Contact** None.
Inhalation Low concentrations may produce drowsiness, mental confusion, nausea, dizziness and vomiting. The skin may be extremely pink, but in severe cases it can often be grey. High concentrations result in rapid loss of consciousness. There is rapid breathing which may stop suddenly. The pulse may be weak or absent. Convulsions can occur. Delayed symptoms can occur after a period of up to 2 weeks. These include confusion, loss of feeling in the fingers and toes, weakness and rarely convulsions.	**Inhalation** **IMMEDIATELY REMOVE FROM EXPOSURE.** Give oxygen: see 8.3.1. Emergency Treatment: see 8.3. Convulsions: see 6.3.2. The patient should be transferred ashore for observation. He should not return to sea within 3 weeks after exposure, and medical clearance should be obtained.

TABLE 620

LIQUEFIED GASES

General Information

These gases are essentially non-toxic. They are usually transported in liquefied form at very low temperatures.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact Severe frost-bite may occur if the liquid is in contact with the skin.	**Skin Contact** Frost-bite, see 6.8
Eye Contact Unlikely to occur, but frost-bite may damage the surface of the eye.	**Eye Contact** Emergency Treatment: see 8.2. Frost-bite see 6.8.
Inhalation At normal temperatures, these chemicals are gases which can displace air in a confined space. This will produce drowsiness and unconsciousness if sufficient gas is inhaled. If there is severe lack of oxygen death may occur	**Inhalation** Emergency Treatment see 8.3. Give oxygen, see 8.3.1.

TABLE 630

TELLURIUM HEXAFLUORIDE

General Information

Tellurium hexafluoride is a severe irritant and is highly toxic

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation	**Skin Contact** Emergency Treatment: see 8.1
Eye Contact There may be severe irritation and redness.	**Eye Contact** Emergency Treatment see 8.2.
Inhalation Mild exposure may result in headache, nausea and shortness of breath The patient may have a dry mouth and a metallic taste is noticed. In severe cases, there may be a garlic-like odour of the breath, profuse sweating and severe breathlessness with frothy sputum, (pulmonary oedema) The onset of symptoms may be delayed for up to 72 hours. Kidney and liver failure may rarely occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6 1 2. Kidney failure: see 6 5 1 Liver failure see 6.4.5.

TABLE 635

SULPHUR DIOXIDE

General Information

This is a colourless gas with a strong pungent odour. It is extremely irritant in high concentrations and is particularly corrosive to the mouth, throat and lungs.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be severe redness and irritation. Chemical burns may occur.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be severe irritation, redness and watering of the eyes. Chemical burns may occur.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation In low or moderate concentrations, there may be irritation of the nose and throat with shortness of breath, a cough and tightness of the chest. There may also be mild wheezing. In more severe cases, breathlessness with frothy sputum (pulmonary oedema) may develop.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. If wheezing occurs, give two puffs of a salbutamol inhaler every 4 hours until the patient's condition improves.

TABLE 640

HYDROGEN SULPHIDE

General Information

This gas is extremely toxic, and has a general effect on the whole body. It has a strong odour of rotting eggs although this may disappear because of paralysis of the sense of smell. It is an irritant of the lungs. It also damages the nervous system, and may cause immediate death.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be mild redness and irritation at high concentrations.	**Skin Contact** Emergency Treatment: see 8.1
Eye Contact At low concentrations, there will be irritation and redness. Higher concentrations produce severe watering with pain and aversion to light	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation Low concentrations will cause a mild cough, irritation of the nose and throat, watering of the eyes, and occasionally chest pain when breathing. Bronchitis may develop after 24 to 36 hours. High concentrations may produce the rapid onset of coma, followed on occasions by convulsions. There may be severe difficulty in breathing with frothy sputum (pulmonary oedema). This can occur up to 72 hours after exposure.	**Inhalation** **IMMEDIATE ACTION IS REQUIRED.** **If the patient is conscious**, he should be placed flat on his back and rest quietly under supervision. Give amyl nitrite as below. **If the patient is unconscious**, place in the unconscious position and insert a Guedel airway (see 5.4). Start artificial respiration by the Silvester method (see 5.3) and heart compression (see 5.3) if breathing has stopped, and the pulse cannot be felt. If the breathing and pulse are present, break an ampoule of amyl nitrite 0.17 mg into a handkerchief or cloth, and hold under the patient's nose so that he inhales the vapour. This should be repeated with a further ampoule at 3 minute intervals, using up to 5 ampoules. Emergency Treatment: see 8.3 Bronchitis: see 6.1.3 Pulmonary oedema: see 6.1.2 Convulsions: see 6.3.2

TABLE 645

HYDROGEN CYANIDE AND HALOGENATED CYANOGENS

General Information

These gases and/or liquids are **extremely** toxic to the whole body, and death may occur very rapidly Treatment must be given **immediately.** Some of these gases (particularly Hydrogen cyanide) have a characteristic odour of bitter almonds.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be irritation and pain. These chemicals are absorbed through the skin, even as gases, producing similar signs to those of inhalation and ingestion (see below). **Eye Contact** There may be irritation and redness. Burns may occur. **Inhalation and Ingestion** There will be immediate irritation of the throat and mouth, followed by the rapid onset of shortness of breath, anxiety, and loss of consciousness. The patient may have a smell of bitter almonds on his breath Convulsions can occur, and death may occur within 30 minutes.	**Skin Contact** Emergency Treatment. see 8.1. If general symptoms occur, treat as for inhalation and ingestion below **Eye Contact** Emergency Treatment see 8 2. **Inhalation and Ingestion** **IMMEDIATE ACTION IS REQUIRED.** **If the patient is conscious**, he should be placed flat on his back and rest quietly under supervision Give amyl nitrite as below. **If the patient is unconscious**, place in the unconscious position and insert a Guedel airway (see 5.4). Start artificial respiration by the Silvester method (see 5 3) and heart compression (see 5 3) if breathing has stopped, and the pulse cannot be felt. If the breathing and pulse are present, break an ampoule of amyl nitrite 0.17 mg into a handkerchief or cloth, and hold under the patient's nose so that he inhales the vapour. This should be repeated with a further ampoule at 3 minute intervals, using up to 5 ampoules. Emergency Treatment see 8.3 and 8.4. Convulsions: see 6.3.2.

TABLE 700

ACIDS

General Information

These chemicals are all corrosive, but they vary in the degree of their severity. They may cause severe chemical burns.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be redness and irritation. Strong acids cause chemical burns with severe pain.	**Skin Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.1.
Eye Contact There is redness, irritation and pain. Chemical burns may occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.2.
Inhalation Weak acids and low concentration of strong acids produce a cough, tightness in the chest and shortness of breath. High concentrations of any acid may cause breathlessness with frothy sputum (pulmonary oedema). Bronchitis or pneumonia can occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Bronchitis: see 6.1.3. Pneumonia: see 6.1.4.
Ingestion Weak acids will give a burning sensation in the mouth with nausea and vomiting. Strong acids can produce severe vomiting with blood. Perforation of the gut can occur.	**Ingestion** Emergency Treatment: see 8.4. Internal bleeding: see 6.4.3. Perforation of the gut: see 6.4.4.

TABLE 705

ALKALIS

General Information

These chemicals are all corrosive, but they vary in the degree of their severity. They may cause severe chemical burns.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be pain followed by whiteness of the skin in the area of exposure. Blistering may occur. In severe cases chemical burns can occur.	**Skin Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.1.
Eye Contact There will be pain, redness and watering of the eye. Chemical burns are likely to occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.2.
Inhalation In mild cases, there may be shortness of breath, tightness of the chest, a cough and soreness in the throat. At high concentrations, severe breathlessness with frothy sputum (pulmonary oedema) can occur. This may be followed by circulatory collapse and unconsciousness.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Circulatory collapse: see 6.2.1.
Ingestion There will be nausea, vomiting and soreness of the throat, with difficulty in swallowing. In severe cases, blood may be vomited and perforation of the gut can occur. Severe pain can occur even if there is no perforation of the gut.	**Ingestion** Emergency Treatment: see 8.4. Internal bleeding: see 6.4.3. Perforation of the gut: see 6.4.4.

TABLE 710

PHENOLS, NITROPHENOLS AND PICRATES

General Information

These are extremely toxic chemicals. They are corrosive, and are rapidly absorbed through the intact skin. They are generally toxic to the whole body. **It is extremely important that any contaminated clothing should be removed at once.** Death can occur.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact These solutions cause severe chemical burns to the intact skin, which are usually painless. The severity of the burn may not therefore be appreciated. It appears as white wrinkled 'dead skin'. Many of these substances e.g. phenol are absorbed through the intact skin causing symptoms similar to those of inhalation and ingestion (see below). Cresols are irritants causing redness. Picrates and Dinitro-ortho-cresol (DNOC) stain the skin yellow causing local irritation.	**Skin Contact** **Immediately remove contaminated clothing. Then wash the skin with water for 10 minutes.** Then wash the skin with polyethylene glycol, molecular wt 300 solution for 10 minutes, changing the swabs regularly. Dress the burn as described in 6.7.
Eye Contact These chemicals will cause severe pain and redness. Chemical burns can occur. Permanent damage to the eye may occur.	**Eye Contact** Emergency Treatment should be given immediately (see 8.2).
Inhalation There will be a burning sensation of the mouth and throat, often with a headache, sweating and nausea. More severe exposure may produce a rapid pulse and breathing rate. A high temperature may occur. In very severe cases breathlessness with frothy sputum (pulmonary oedema) may rarely occur. The patient can also develop mental agitation, confusion, heart failure and circulatory collapse. Convulsions are a possible complication.	**Inhalation** Emergency Treatment: see 8.3 Pulmonary oedema: see 6.1.2 Heart failure: see 6.2.2. Circulatory collapse: see 6.2.1. Convulsions: see 6.3.2 High temperature see 6.6 Mental agitation: see 6.3.3.
Ingestion There will be nausea, vomiting and abdominal pain. In severe cases there are chemical burns of the mouth, gullet and stomach, producing pain, difficulty in swallowing and occasionally vomiting of blood. The pupils are often dilated, and the patient is pale and sweating. A high temperature may occur. Kidney failure may occur. Symptoms similar to those of inhalation can occur.	**Ingestion** Emergency Treatment: see 8.4 Internal bleeding: see 6.4.3 Kidney failure see 6.5.1 High temperature see 6.6

TABLE 711

CHLOROPHENOLS AND CHLOROPHENATES

General Information

These chemicals are irritants of the skin, mouth, throat, and lungs. They are toxic to the nervous system, particularly Pentachlorophenol.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be irritation and redness. A widespread skin rash can develop. They are absorbed through the intact skin and may produce symptoms similar to those of inhalation (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be severe irritation, redness, and watering.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation There will be irritation of the nose and the throat, with nausea. In more severe cases, profuse sweating with a high temperature, nausea and vomiting occur. There will be shortness of breath and occasionally chest pain. This may be followed by drowsiness, convulsions and unconsciousness. Bronchitis can occur.	**Inhalation** Emergency Treatment: see 8.3. Bronchitis: see 6.1.3. Convulsions: see 6.3.2. High temperature: see 6.6.
Ingestion There will be nausea and vomiting, sometimes with abdominal pain. Drowsiness and shortness of breath can occur.	**Ingestion** Emergency Treatment: see 8.4

TABLE 715

PERMANGANATES

General Information

These chemicals are severely corrosive to the mouth, gullet, and stomach. They are particularly toxic if ingested.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be brown discoloration and irritation. Chemical burns can occur, particularly after prolonged contact.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There will be redness and irritation. Chemical burns can occur.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation This is unlikely to occur, except if the solid is heated in fires. The fumes will cause severe irritation of the nose and throat, with a cough, chest pain and shortness of breath. Breathlessness with frothy sputum (pulmonary oedema) may occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2.
Ingestion There will be a burning sensation in the mouth and throat with nausea and vomiting. The linings of the mouth may be swollen and coloured brown. Difficulty in breathing is occasionally experienced. In very severe cases, there may be vomiting of blood. Circulatory collapse and death can occur. Liver and kidney failure may occur, as late complications.	**Ingestion** Emergency Treatment: see 8.4. Rinse the mouth out thoroughly with water. Internal bleeding: see 6.4.3. Circulatory collapse: see 6.2.1. Kidney failure: see 6.5.1. Liver failure: see 6.4.5. **RADIO FOR MEDICAL ADVICE.**

TABLE 720

HYDRAZINE AND COMPOUNDS

General Information

These are highly toxic chemicals that fume in air. They are extremely irritant to the skin, mouth, throat, and lungs, and may depress the nervous system

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be severe irritation and redness from the vapour The liquid causes severe chemical burns. It is absorbed through the intact skin and may produce symptoms similar to those of inhalation and ingestion (see below)	**Skin Contact** Emergency Treatment: see 8 1. **IMMEDIATE ACTION IS REQUIRED** after liquid contact.
Eye Contact The vapour produces severe irritation and redness. It may also result in temporary loss of vision, lasting for up to 24 hours The liquid causes severe chemical burns. Permanent damage to the eye may occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment. see 8.2 If loss of vision occurs the patient should be transferred ashore as soon as possible.
Inhalation In mild cases, there will be irritation of the nose, mouth and throat, with a cough and shortness of breath Severe exposure can result in breathlessness with frothy sputum (pulmonary oedema), weakness, vomiting, loss of weight, mental agitation and occasionally convulsions. Liver and kidney failure may occur.	**Inhalation** Emergency Treatment: see 8.3 Pulmonary oedema. see 6 1 2 Convulsions: see 6.3.2. Liver failure: see 6 4.5. Kidney failure: see 6.5.1 Mental agitation: see 6.3.3.
Ingestion There will be nausea and vomiting with abdominal pain. Perforation of the gut can occur. Symptoms similar to those of inhalation may develop (see above).	**Ingestion** Emergency Treatment: see 8 4 Perforation of the gut see 6.4 4

TABLE 725

AMMONIA AND COMPOUNDS

General Information

Ammonia gas and solutions containing ammonia are severe corrosives of the skin and lungs. They have a strong pungent odour. Liquid anhydrous ammonia and concentrated solutions cause severe damage to the skin and eyes. Death may occur.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be redness and irritation. Chemical burns may occur.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be redness and severe irritation. Chemical burns can occur and there may be temporary loss of vision. Permanent damage to the eye can occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.2. If loss of vision occurs, the patient should be transferred ashore as soon as possible.
Inhalation Mild exposure usually results in irritation of the mouth, nose and throat. There may be a cough, fever and shortness of breath. Severe exposure can cause breathlessness with frothy sputum (pulmonary oedema), wheezing, chest pain and circulatory collapse. Bronchitis may be a complication.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Circulatory collapse: see 6.2.1. Bronchitis: see 6.1.3. **Wheezing** – if wheezing occurs give 2 puffs of a salbutamol inhaler every 2 hours until the patient improves.
Ingestion This is unlikely to occur. There will be nausea and vomiting, and in severe cases, blood may be vomited and perforation of the gut may occur.	**Ingestion** Emergency Treatment: see 8.4. Perforation of the gut: see 6.4.4. Internal bleeding: see 6.4.3.

TABLE 735

PEROXIDES

General Information

These chemicals vary in their degree of corrosive action. Most of them are irritants of the skin mouth, throat, and lungs, and are particularly harmful to the eyes.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be severe redness and irritation. Chemical burns can occur.	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be severe redness and irritation. Chemical burns can occur either immediately, or in some cases up to one week later. Permanent damage to the eye can occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.2
Inhalation In mild cases, there may be shortness of breath, tightness of the chest, a sore throat, and a cough. Bronchitis can develop. At high concentrations, severe breathlessness with frothy sputum (pulmonary oedema) can occur. This may be followed by circulatory collapse and unconsciousness	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2 Circulatory collapse: see 6.2.1 Bronchitis: see 6.1.3.
Ingestion There will be nausea, vomiting and soreness of the throat with difficulty in swallowing. In severe cases blood may be vomited, and perforation of the gut can occur. Severe pain will occur even if there is no perforation of the gut.	**Ingestion** Emergency Treatment: see 8.4 Internal bleeding, see 6.4.3. Perforation of the gut: see 6.4.4

TABLE 740

CHLORINE, BROMINE, IODINE AND TEAR GAS

General Information

These chemicals are all highly irritant and corrosive to the skin, mouth, throat and lungs. Also covered by this table are those compounds which are corrosive and contain chlorine, bromine and iodine

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be severe redness and irritation. A red skin rash with small septic blisters and ulcers may develop. Chemical burns may occur Many of these chemicals are absorbed through the intact skin producing similar signs to those of inhalation (see below).	**Skin Contact** Emergency Treatment, see 8 1.
Eye Contact There will be severe redness, irritation and watering. Chemical burns may occur Bromine is particularly dangerous	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment see 8.2
Inhalation Low concentrations will cause shortness of breath, a cough, chest pain and headache Pneumonia may develop. High concentrations may produce the rapid onset of severe shortness of breath with frothy sputum (pulmonary oedema) The patient is often nauseated with vomiting and upper abdominal pain Unconsciousness may occur.	**Inhalation** Emergency Treatment· see 8 3. Pulmonary oedema: see 6.1.2. Pneumonia see 6.1 4
Ingestion There will be nausea headache, vomiting and upper abdominal pain Blood may be vomited.	**Ingestion** Emergency Treatment· see 8 4 Internal bleeding see 6 4 3

TABLE 740

CHLORINE, BROMINE, IODINE AND TEAR GAS

General Information

These chemicals are all highly irritant and corrosive to the skin, mouth, throat and lungs. Also covered by this table are those compounds which are corrosive and contain chlorine, bromine and iodine.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be severe redness and irritation. A red skin rash with small septic blisters and ulcers may develop. Chemical burns may occur. Many of these chemicals are absorbed through the intact skin producing similar signs to those of inhalation (see below).	**Skin Contact** Emergency Treatment, see 8.1.
Eye Contact There will be severe redness, irritation and watering. Chemical burns may occur. Bromine is particularly dangerous.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.2.
Inhalation Low concentrations will cause shortness of breath, a cough, chest pain and headache. Pneumonia may develop. High concentrations may produce the rapid onset of severe shortness of breath with frothy sputum (pulmonary oedema). The patient is often nauseated with vomiting and upper abdominal pain. Unconsciousness may occur.	**Inhalation** Emergency Treatment: see 8.3. Pulmonary oedema: see 6.1.2. Pneumonia: see 6.1.4.
Ingestion There will be nausea, headache, vomiting and upper abdominal pain. Blood may be vomited.	**Ingestion** Emergency Treatment: see 8.4. Internal bleeding: see 6.4.3.

TABLE 745

CHLORATES, PERCHLORATES AND BROMATES

General Information

These chemicals are corrosive to the skin and lungs They also can damage the blood cells causing asphyxia.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be redness and irritation Chemical burns can occur	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There will be severe redness and irritation Chemical burns can occur.	**Eye Contact** Emergency Treatment see 8 2.
Inhalation This is unlikely to occur, but may produce shortness of breath, a cough and chest pain. Symptoms similar to those of ingestion may develop (see below).	**Inhalation** Emergency Treatment: see 8 3
Ingestion There will be nausea, vomiting and abdominal pain. Bleeding from the stomach may occur These chemicals can be absorbed from the gut producing headache, drowsiness and unconsciousness. The patient's hands, lips and face may become blue and subsequently the skin turns yellow because of damage to the blood cells (methaemoglobinaemia) Kidney and liver failure may occur.	**Ingestion** Emergency Treatment. see 8 4. Internal bleeding: see 6 4 3 Liver failure. see 6.4 5 Kidney failure· see 6 5.1. **Methaemoglobinaemia** If these signs develop, and **if the patient is conscious,** give 20 ml of methylene blue 1% by mouth Also give 1 g of ascorbic acid by mouth and repeat every four hours for 24 hours. **If the patient is unconscious,** give 5 ml of 10% ascorbic acid intramuscularly. **RADIO FOR MEDICAL ADVICE.**

TABLE 750

FLUORINE AND FLUORIDES

General Information

These chemicals, particularly Fluorine and Hydrogen fluoride are extremely corrosive. They are highly toxic to the whole body. In addition URANIUM HEXAFLUORIDE may cause kidney failure (see 6.5.1).

RADIO FOR MEDICAL ADVICE

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be severe pain and redness. The skin may be destroyed immediately as with a heat burn. In other cases, there is persistent pain and redness at the site of contact indicating continuing destruction of tissue underneath the skin. Therefore, the surface skin may not be destroyed for several days.	**Skin Contact** **IMMEDIATE ACTION IS REQUIRED.** **Wash with water for 10 minutes.** Rub in calcium gluconate gel over the area of the burn until the pain subsides. If the pain persists, apply a dressing containing calcium gluconate gel over the burn. Change this every 8 hours until the pain and redness disappear. Emergency Treatment: see 8.1.
Eye Contact There will be severe pain and redness. Chemical burns can occur. Permanent damage to the eye may occur.	**Eye Contact** **IMMEDIATE ACTION IS REQUIRED.** Emergency Treatment: see 8.2.
Inhalation There will be shortness of breath with a cough and soreness of the chest. Bronchitis may develop. In severe cases breathlessness with frothy sputum (pulmonary oedema) can occur. There may be blurring of vision and muscle spasms with "clawing" of the hands.	**Inhalation** Emergency Treatment: see 8.3. Bronchitis: see 6.1.3. Pulmonary oedema: see 6.1.2.
Ingestion Vomiting, abdominal pain and diarrhoea will occur. There may be blood in the vomit, and in the faeces, in severe cases muscle spasms with clawing of the hands and the feet, blurring of vision and convulsions can occur.	**Ingestion** Give calcium gluconate effervescent tablets 5 g in 250 ml ($\frac{1}{2}$ pint) of water by mouth immediately. Emergency Treatment: see 8.4. Convulsions: see 6.3.2. Internal bleeding: see 6.4.3.

TABLE 800

NICOTINE AND COMPOUNDS

General Information

These chemicals may have a severe toxic action on the heart, blood vessels and nervous system.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There is usually only mild irritation. They are absorbed through the skin causing toxic symptoms similar to those of inhalation (see below).	**Skin Contact** Emergency Treatment: see 8.1.
Eye Contact There may be mild redness and irritation.	**Eye Contact** Emergency Treatment: see 8.2
Inhalation and Ingestion There may be a cough with shortness of breath and a headache. In more severe cases, the symptoms include dizziness, general weakness, nausea, vomiting, diarrhoea, and irregular pulse rate, pain in the centre of the chest, difficulty in breathing, sweating, wide pupils and a fall in the blood pressure. In very severe cases there may be blue discoloration of the skin, mental confusion, convulsions and unconsciousness. Death may occur.	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4. Convulsions: see 6.3.2. Mental confusion: see 6.3.3. If there is difficulty in breathing and/or a slow or irregular pulse, give atropine sulphate one mg intramuscularly. If there is no improvement after 1 hour, then give a further one mg of atropine intramuscularly. Do not give more than two doses **RADIO FOR MEDICAL ADVICE.**

TABLE 805

STRYCHNINE AND BRUCINE

General Information

These chemicals are extremely toxic to the nervous system.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There may be mild irritation.	**Skin Contact** Emergency Treatment. see 8.1
Eye Contact There may be mild irritation and redness.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation and Ingestion There may be a short interval of up to 30 minutes before symptoms occur. There is a feeling of numbness followed by stiffness of the face and neck muscles. After this, severe exposure may cause twitching of the muscles with characteristic attacks of convulsions lasting one to 2 minutes at regular intervals. These convulsions consist of extended arms and legs, the body is arched and may be supported by the head and heels only. The face expresses fear and breathing may stop. Consciousness may be retained. The eyes tend to bulge and there is blue discoloration of the skin. Death may occur	**Inhalation and Ingestion** Emergency Treatment: see 8.3 and 8.4. Convulsions see 6.3.2 The patient should be kept in a quiet, dark room, since any noise may set off a convulsion. **RADIO FOR MEDICAL ADVICE.**

TABLE 851

CASTOR BEANS

General Information

The beans or the meal may generate serious reactions in those who are allergic to them, after contact with skin, eyes or mucous membranes. After ingestion of beans, there may be destruction of red blood cells and injury to all other cells of the body.

RADIO FOR MEDICAL ADVICE.

SIGNS AND SYMPTOMS	TREATMENT
Skin Contact There will be redness, irritation and swelling of the skin (urticaria).	**Skin Contact** Emergency Treatment: see 8.1. If severe swelling of the skin occurs, give Chlorphenamine (Chlorpheniramine) 10 mg intramuscularly.
Eye Contact There will be redness, irritation and swelling of the eyelids.	**Eye Contact** Emergency Treatment: see 8.2.
Inhalation There will be shortness of breath with cough. In severe cases, wheezing with severe breathlessness will occur.	**Inhalation** Emergency Treatment: see 8.3 Wheezing – If wheezing occurs give 2 puffs of a Salbutamol inhaler every 2 hours until the patient improves
Ingestion There will be burning of the mouth, nausea, vomiting and diarrhoea. In severe cases there may be blue discoloration of the lips, convulsions and circulatory collapse. Kidney failure may occur later. Death can occur.	**Ingestion** Emergency Treatment: see 8.4. If there is blue discoloration of the lips give oxygen: see 8.3.1. Convulsions: see 6.3.2 Circulatory collapse: see 6.2.1. Kidney failure: see 6.5.1.

10 INDEX OF CHEMICAL TABLES

10.1 INDEX OF CHEMICAL TABLES BY TABLE NUMBERS

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505	Organophosphorus and carbamate pesticides
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805	Strychnine and brucine
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851	Castor beans

10 2 INDEX OF CHEMICAL TABLES BY CHEMICAL GROUP

Chemical Group	Table No.
Antimony and compounds	130
Aromatic esters and ethers	330
Arsenic and compounds	100
Arsine	605
Azides	220
Barium and compounds	120
Benzene	312
Benzoic derivative pesticides	530
Beryllium and compounds	125
Bipyridilium pesticides	525
Boranes	245
Boric acid and borates	240
Bromine	740
Bromates	745
Brominated hydrocarbons	345
Brucine	805
Cadmium and compounds	115
Camphor oil	331
Carbamate pesticides	505
Carbon dioxide	615
Carbon monoxide	616
Carbon sulphides	210
Castor beans	851
Chlorates	745
Chlorinated hydrocarbons	340
Chlorine	740
Chlorites	741
Chloroacetates	540
Chloroarsines	101
Chlorophenates	711
Chlorophenols	711
Chromium and compounds	155
Copper and compounds	150
Cyanides (inorganic and organic)	215
Diethyl sulphate	315
Dimethyl formamide	321
Dimethyl sulphate	315
Dithiocarbamates	506
Fluorinated hydrocarbons	345
Fluorinated hydrocarbons – refrigerants	350
Fluorides	750
Fluorine	750
Fluoroacetates	540
Fumigants	550
Germane	606
Halogenated cyanogens	645
Hydrazine and compounds	720
Hydrocarbons	310
Hydrocarbons – petroleum, petroleum products and gases	311
Hydrogen cyanide	645
Hydrogen phosphide	205
Hydrogen sulphide	640
Hypochlorites	741
Iodine	740
Iodinated hydrocarbons	345
Isocyanates	370
Ketones	300
Lead and compounds	110
Lead tetraethyl	111
Lead tetramethyl	111
Lithium and compounds	160
Liquefied gases	620
Mercaptans	375
Mercury and compounds	105
Metal alkyls	170
Metal carbonyls	165
Methyl alcohol	306
Miscellaneous pesticides	530
Morpholine	322
Naphthalene	314
Nicotine and compounds	800
Nitrates	235
Nitrites	235
Nitriles	215
Nitro compounds of the aromatic series	335
Nitrogen oxides	610
Nitrophenols	710
Nitrophenol pesticides	515

Chemical Group	Table No.
Organochlorine pesticides	500
Organophosphorus and carbamate pesticides	505
Organotin pesticides	545
Osmium tetroxide	181
Oxalates	230
Perchlorates	745
Perchloromethyl-mercaptan	376
Permanganates	715
Peroxides	735
Petroleum and petroleum products	311
Phthalimide pesticides	530
Phenols	710
Phenoxyl pesticides	510
Phenyl urea pesticides	520
Phosgene	600
Phosphides	205
Phosphine	601
Phosphorus (yellow)	200
Picrates	710
Pyridines	325
Rodenticides	535
Selenium and compounds	175
Stibine	606
Strychnine	805
Sulphides	225
Sulphur dioxide	635
Tear gas	740
Tellurium hexafluoride	630
Thallium and compounds	140
Triazine pesticides	530
Tricresylphosphate	355
Turpentine	313
Vanadium and compounds	135
Zinc and compounds	145

11 LIST OF MEDICINES

Note

Labelling, storage and the dispensing method should in general conform to the relevant specifications in the IMGS

Contents and storage conditions to be checked at frequent intervals, taking into account manufacturers' instructions, including e g. durability and, in some cases, the need to jettison residual medicine after initial use

Name[1]	Recommended Standard Unit	Format	Quantity[2]
Aminophylline	360 mg	Suppository	60
Ampicillin	500 mg	Capsule	100
Ampicillin	500 mg	Ampoule	100
Amyl nitrite	0 17 mg in 0.2 ml	Ampoule	96
Ascorbic acid (Vitamin C)	1 g	Tablet	120
Ascorbic acid (Vitamin C)	500 mg in 5 ml	Ampoule	20
Atropine sulphate	1 mg in 1 ml	Ampoule	200
Calcium gluconate 2%	25 g	Tube	6
Calcium gluconate effervescent	1 g	Tablet	10
Charcoal, activated	5 g	Sachet or powder	10
Chloramphenicol 1% eye ointment	40 mg in 4 g	Tube	10
Chlorphenamine (Chlorpheniramine)	10 mg in 1 ml	Ampoule	20
Chlorpromazine	25 mg in 1 ml	Ampoule	80
Diazepam	10 mg in 2 ml	Ampoule	60
Dimercaprol	100 mg in 2 ml	Ampoule	160
Ethyl alcohol 10% solution	500 ml	Bottle	4
Fluorescein sodium 1% or 2%		Eye test strip	100
Furosemide (Frusemide)	20 mg in 2 ml	Ampoule	40
Furosemide (Frusemide)	40 mg	Tablet	80
Glucose	500 g	Powder	1
Macrogol 300 (Polyethylene glycol m.w. 300)	1 litre	Bottle	2
Magnesium trisilicate compound	250 mg	Tablet	40
Methylene blue 1%	10 ml	Ampoule	40
Metoclopramide hydrochloride	10 mg in 2 ml	Ampoule	60
Morphine sulphate	15 mg in 1 ml	Ampoule	30
Naloxone hydrochloride	0 4 mg in 1 ml	Ampoule	30
Oxygen giving set. Comprising the following. 2 × oxygen cylinders with 1–1½ hours supply of oxygen 1 flow-meter unit giving a setting of 4 litres per minute 1 pressure regulating unit 1 set of tubing 5 × 24% oxygen disposable masks 5 × 35% oxygen disposable masks Each part constructed so that it can only be assembled in the correct manner			1 set
Paracetamol	500 mg	Tablet	120
Phytomenadione (Vitamin K_1)	10 mg in 1 ml	Ampoule	4
Salbutamol aerosol inhaler unit	0.1 mg per dose	200 dose container	4
Sulfamethoxazole trimethoprim (Co-trimoxazole)	400 + 80 mg (480 mg)	Tablet	50

Note Also needed in connexion with chemical poisoning are Aspirin, soluble (Acetylsalicylic Acid), Lint, Vaseline gauze dressing(s), Crepe bandages, Tubular dressings, Sterile water, Cotton wool. It is assumed that these will be found in the ordinary medicine supplies carried.

[1] The medicines are listed under their International Nonproprietary (generic) Names (INN) for pharmaceutical substances recommended in the 'Cumulative List No 5 Geneva 1977, World Health Organization (WHO)'' In some countries the recommended medicines may not be available under these non-proprietary names and Administrations should provide a cross-index of the non-proprietary names and the proprietary names of the available and equivalent medicines in their country In establishing a national list of medicines, the guidelines of WHO as contained in 'The selection of essential drugs, Technical Report Series 615, WHO, Geneva 1977', should be taken into account

[2] The recommended quantities of medicines to be carried on board are based on an estimate of risks **They should generally be sufficient to treat**

1 In case of inhalation
   1 a complete crew of about 24 in the event of a major emergency (e g explosion) for a period of 24 hours by which time evacuation can be expected to have been completed or additional supplies of medicines to have been brought in by the rescue services,
   2 a few persons exposed in a lesser emergency until the ship reaches the next port or the casualties are cured,
2 In case of ingestion or eye contact, one or two persons until landed or cured, and
3 In case of skin contact (leakage or spillage), four persons until landed or cured

The medicines and the recommended quantities will be reviewed after the new International Medical Guide for Ships (IMGS) has been published by the World Health Organization (WHO).