The recommendations for emergency treatment found in this volume are based on procedures developed by recognized authorities and from the extensive experience of a major chemical producer. Nevertheless, the users of this first aid manual must realize that first aid techniques are constantly being improved and that the general standards for the health and safety of individuals are being raised. It is necessary that the book's users be trained to distinguish correctly the different symptoms of intoxication described in this book, that they be fully qualified to render first aid treatment and that they remain current with the latest developments in first aid treatment. This manual is not to be construed as a substitute for any legal practice. In any case, the author, editor, publisher, or the publisher's agents shall not be liable or responsible in any manner whatsoever for any errors or omissions in this book, or for the use of the contents of this book.

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Library of Congress Catalog Card Number 88-27996
ISBN 0-442-20490-6

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Printed in the United States of America

Van Nostrand Reinhold
115 Fifth Avenue
New York, NY 10003

Chapman and Hall
2-6 Boundary Row
London, SE1 8HN, England

Thomas Nelson Australia
102 Dodds Street
South Melbourne 3205
Victoria, Australia

Nelson Canada
1120 Birchmount Road
Scarborough, Ontario M1K 5G4, Canada

16 15 14 13 12 11 10 9 8 7 6 5 4 3

Library of Congress Cataloging-in-Publication Data

Lefèvre, M. J. (Marc J.)
First aid manual for chemical accidents.

Translation of: Manuel de premiers soins d'urgence.
1. First aid in illness and injury. 2. Industrial accidents. 3. Industrial toxicology. I. Conibear, Shirley A. II. Title.
RC963.3.L4313 1989 615.9'08 88-27996
ISBN 0-442-20490-6

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Compiler's Preface

This manual of first aid is not the work of only one physician, but of a whole staff.

Without the bibliographical references, books, and data that SOLVAY & Cie has provided to its Department of Toxicology, this manual would have been left as a draft or a project in a drawer.

The first French edition is out of print.

I express all my gratitude for the really valuable assistance to all the people of SOLVAY & Cie, S.A., Brussels of LAPORTE INDUSTRIES, LTD and of THE SOLVAY AMERICAN CORPORATION who collaborated on the issue of this revised English-language edition. The English translation and medical terminology have been reviewed by me.

M. J. LEFÈVRE, M.D.

Editor's Preface

Sudden exposure to industrial chemicals requires prompt, effective action in order to avoid serious injury or even death. This first aid manual provides you with the information needed to make the appropriate response. It is intended for use by people working in factories, laboratories, on farms, or in the transport of industrial chemicals. Law enforcement personnel, firefighters, and others likely to be first on the scene will also find it useful.

This manual was first developed and used by Solvay & Sie, S.A., an international chemical company, to satisfy a practical need to provide specific, easy to locate, and correct advice for workers in various aspects of chemical manufacturing, storage, and transport. The second edition has been extensively expanded to include an Appendix which identifies over 250 pesticides by generic and trade names and an Appendix of the chemicals organized by CAS number. The text itself has been expanded to include more than 200 additional chemicals selected because of their frequent use in the United States.

The book can also be used in non-emergency situations when it is necessary to give advice about emergency actions to others, as in the creation of labels or material safety data sheets. Persons responsible for developing a plan for dealing with emergencies will find it useful, as will those who train others to respond to chemical emergencies. It can be used as a supplement to CPR and first aid training in educational programs for first responders.

The manual is organized to provide a quick index either by common or chemical name, or by CAS number. Once the chemical is identified, the user is directed to a list of expecteld symptoms and then to the proper response depending on the route of exposure. The advice is arranged so that the most urgent problems are taken care of first while stressing to the user the importance of taking appropriate self-protective measures. Often, the victims of industrial accidents tragically multiply as successive rescuers become victims themselves because they have not taken protective measures.

It is hoped that this book will serve as a focal point for organizing a response to exposure emergencies, and will help to minimize or prevent serious injury if an accident does occur. There are many support services available when an accident occurs. The book emphasizes making contact with

all parts of the emergency response system including local Emergency Medical Services, and national programs like ChemTrec or Poison Control Centers

It should be noted that this book deals only with acute exposures. None of the symptoms are considered, nor is the advice appropriate for chronic low level exposures, and the risk of carcinogenesis is not addressed by this book.

Masculine pronouns have been used throughout this book for reasons of conciseness, they are intended to refer to both females and males.

SHIRLEY CONIBEAR, M.D., M.P.H.

INTRODUCTION

I. THE IMPORTANCE OF THE FIRST RESPONDENT'S ROLE

Books and pamphlets on emergency treatment of chemical exposures have usually been written for toxicologists, physicians, or other medical personnel who have years of experience and a thorough knowledge of biochemistry, clinical medicine, toxicology, and diagnostic procedures. Authors also assume that these practitioners have medical equipment and drugs available. Little has been written specifically for use by the first respondent to an accident who is more likely to be the shop foreman or the laboratory employee. This book is written to fill that gap

The *First Aid Manual for Chemical Accidents* was conceived, planned, and written for persons likely to be first on the accident scene: foremen, production workers, firefighters, chemists, laboratory workers, chemical engineers, agricultural workers, law enforcement personnel, railroad workers, and truck drivers. These are the people, located in the factory, on the production line, on the road, in the laboratory, on farms or in forests, who could suddenly be called upon to render assistance to a fellow worker, a friend, or a stranger who is the victim of chemical poisoning because of a mistake or accident.

The first respondent will have to move the victim to a safe place and revive or sustain vital functions until the arrival of a rescue team possessing the authority, experience and skill to provide definitive emergency medical treatment. It is the first respondent's duty and responsibility to first give the alarm to others in the area, and then in sequence, to protect himself suitably using the appropriate respirator, occlusive clothing, gloves, goggles, etc; to remove the victim from the contaminated area, to notify the Emergency Medical Service (EMS); to take charge of the victim; to support respiration and cardiac function; and to calm and comfort the victim, all with a view to minimizing the consequences of the poisoning. If appropriate procedures including first aid measures are not carried out in a timely fashion, the victim may suffer serious consequences. This book provides you, the first respondent, with specific information about the first aid measures appropriate for over 600 hazardous chemicals in common use

II. A DESCRIPTION OF THE KNOWLEDGE AND EQUIPMENT PRESUMED TO BE IN THE FIRST RESPONDENT'S POSSESSION

Your proficiency in cardiopulmonary resuscitation (CPR) is presumed. Virtually every community and many companies offer a course in CPR at little or no cost to the individual. Almost everyone is capable of learning this skill

and anyone who is serious about wanting to provide help in the case of a chemical exposure should take a CPR course and become proficient. First aid training is desirable and also easy to obtain but is not presumed.

The OSHA Hazard Communication Rule has mandated that in most instances where large volumes of hazardous chemicals are in use, workers be trained in proper protective practices and informed of the nature and hazards of the materials with which they work. Material Safety Data Sheets (MSDS's) and labels are to be supplied and made available in the workplace to aid in identification and proper response in an emergency. However, you, the first respondent, may be from a different department or from outside the company and not be familiar with the materials in use. Ask other workers at the scene for the name of the material and its MSDS or make an attempt to locate and read the label. Trade and common names and chemical synonyms sometimes make identification difficult. For this reason, unique permanent numbers called CAS (Chemical Abstract Service) numbers have been assigned to each individual chemical. These are used internationally and can be used to definitively identify a chemical. A cross reference of chemicals listed in numerical order by their CAS numbers is located in appendix D.

In the case of a fire or explosion, labels and MSDS's may have been destroyed or be unavailable. In that case, you can get clues as to the type of chemical by determining what it was being used for, made with or from, or the final product of the operation. Department of Transportation (DOT) labels may be present on a truck or tank car and give some basic information (see appendix B). Manifests on a truck or train may be available to identify the chemical, the shipper and its destination.

Equipment and supplies to be used in caring for the victim should be selected according to the types of hazards most likely to be encountered in a specific plant, situation, or site. Personal protective equipment including an air-supplied respirator, occlusive clothing, boots, gloves, goggles, etc. must be available to the first respondent and be appropriate for the hazardous products being handled. Other equipment available for emergency care should include a spoon; one or two 8 ounce plastic drinking glasses; a kidney basin; a clean bucket; two pillows; two clean cotton sheets; two blankets, preferably of wool; a stretcher, cot, or bed; access to a sink with hot and cold running water; ice; a cold or, preferably, luke-warm shower; hand soap; towels; a pair of strong blunt scissors; a pocket mask or bag-valve mask for use in giving artificial respiration. For special cases, an oxygen cylinder with control valve and mask may be included.

A few over-the-counter pharmaceutical products should be available such as 70% rubbing alcohol, ethyl alcohol, cotton wool, dry gauze dressing, adhesive tape, lime water, calcined magnesia, activated charcoal, syrup of

ipecac and sodium sulfate. Foodstuffs such as milk or fresh eggs are often used. Powdered milk or eggs can be kept well for a long time in hermetically sealed cans. Otherwise, first aid never requires medicinal preparations

III. ORGANIZATION OF THE MANUAL

Chemical Index of Products

This alphabetical list starting on page 11 gives the chemical and some trade names and other synonyms of almost 600 substances frequently encountered in the chemical industry and in agriculture. In order to avoid making the main index unmanageable, neither a full list of all synonyms nor any pharmaceutical substances proper have been included. This list contains some names of classes or types of chemicals (e.g alkanes) which do not have a single CAS number. Appendix D contains the entire main list of individual chemicals organized by CAS number. In the case of pesticides, the main alphabetic list is supplemented by Appendix C which contains a list of pesticides in alphabetic order by commercial and common name. This list is cross referenced back to its category or class of pesticide in the main alphabetic list.

The numbers immediately following the chemical names in the main index refer you to **the Signs and Symptoms section (white pages)** and advise first aid measures according to the type(s) of contact with the substances **(yellow for inhalation, green for ingestion, pink for skin contact, and blue for eye contact)**.

Signs and Symptoms (*white* pages)

In these **white** pages, substances are grouped together in "families" that cause the victim to manifest more or less similar signs and symptoms, with a unique section number assigned to each family. A symptom is something felt by the victim, e.g. shortness of breath. To find out what symptoms the victim has, ask him how and what he feels. A sign is something you can observe about the victim, e.g. rapid, labored breathing. Use your eyes, ears, nose and touch to gain such information about the victim's condition.

At the top of the first page of each chemical family's section is an alphabetic list of names of the chemicals covered in that section. Concise information regarding any special physical or toxic properties follows. Finally, a list of signs and symptoms ordered from mild to increasingly severe appears for each of the various types of contact, with references to the colored pages

for first aid. The larger the dose or the longer the exposure, the more likely you are to see signs and symptoms further down the list

These lists include the more serious signs and symptoms that would be observed or might develop if the victim had a massive exposure and were given no first aid and no subsequent medical treatment. This is why most of the descriptions terminate with the words "coma" and "death."

At this point, one must make a comparison: If a child falls into water or an adult is caught in quicksand, death will inevitably put an end to their vain efforts, their anguish, and their cries for help if no outside aid reaches them. A hand, a cloth, or a branch held out can quickly save their lives or prevent any serious consequences; the accident becomes an incident and eventually an anecdote But it is necessary that the person seeing the potential tragedy, the first respondent in this case, act quickly and coolly. Reading the descriptions should not, therefore, provoke panic, but instead inspire your determination to act quickly and calmly in order to prevent progression to the most tragic result.

First-Aid Instructions (*yellow*, *green*, *pink*, and *blue* pages)

The colored pages list the first aid measures to be given in their prescribed order before the arrival of the EMS rescue team, and depend on the patient's condition, the dose and the effects of the poison.

- The **yellow** pages refer to poisoning by INHALATION.
- The **green** pages refer to poisoning via the digestive tract by INGESTION or SWALLOWING.
- The **pink** pages refer to poisoning by SKIN CONTACT.
- The **blue** pages refer to poisoning by EYE CONTACT.

As a cross check, each of the colored "type-of-contact" sections repeats the list of substances for which the stated first aid measures are appropriate. In order to avoid mistakes, always verify whether the relevant chemical substance is listed at the top of the first-aid page that you are consulting.

Appendix A: General Instructions in Case of Poisoning by Unknown Chemical Products

The information in these pages is intended for cases where the exact chemical name of the injuring substance is doubtful or unknown, for example, a person found unconscious or with evidence of splashing by a mixture of substances. This appendix is also organized by type of contact.

Appendix B: Meaning of DOT Symbols

Vehicles transporting hazardous chemicals must carry a Department of Transportation (DOT) type label which gives some useful information about the chemical being hauled. This appendix tells you how to decipher the DOT symbols found on these labels.

Appendix C: Glossary of Commercial and Common Pesticide Names

This is an alphabetic list of pesticides using commercial or trade names as well as common names. Some pesticides may be listed twice by both commercial and common name Each is cross referenced back to a pesticide group contained in the main alphabetic listing. This list supplements the main list. Some individual pesticides are also listed individually in the main list. If you don't find the name of the chemical in the main list and you suspect that it is a pesticide, look it up in **APPENDIX C.**

Appendix D: Chemicals in CAS Number Order

This list contains all of the chemicals in the main list that have an individual CAS number.

IV. USING THE MANUAL

To be successful, first aid must be given without delay. To facilitate use of the manual, it is advised that you go through the main list and mark chemicals that are present in your work environment or that you can anticipate may be introduced into the work environment. Fill in the names and phone numbers of emergency response organizations and personnel in the space provided on the last page of this book. Verify these numbers periodically by calling them.

If the chemical substance that has caused the injury is not precisely known, you must make an educated guess as to the identity and nature of the substance. That can be done from the external characteristics (such as smell, appearance, thickness, color, etc.) of the spilled substance, or from the signs and symptoms exhibited by the victim. If you have no idea what the chemical is, consult **APPENDIX A** on page 215.

Generally, however, the substance responsible will be known or discoverable. In that case, follow this procedure:

1 Look up the name of the substance in the main alphabetic chemical index.

The name is followed by several numbers that refer to the sections to be consulted depending on the type of contact. Alternatively, look up the CAS number in **APPENDIX D** if that is the information available to you. Then refer back to the main chemical index. If the material is a pesticide and is not in the main list, check **APPENDIX C** for a category cross reference back to the main product list.

2. Next, turn to the section in the Signs and Symptoms chapter listed in the first column. Verify that the exposure was to a chemical listed in the table at the start of the section. Verify that the victim's symptoms roughly correspond to those described. If they do not, follow the general instructions given in **APPENDIX A** on page 215.

3. If the signs and symptoms do correspond, turn to the section number in the colored pages corresponding to the type of contact that the victim had. Note that skin contact implies inhalation if the material is a liquid that evaporates easily. Suspect skin contact if the material is a gas or vapor, especially if the victim has been sweating or is wet. Ingestion may occur if the victim is exposed to a dust or powder. If he doesn't spit out material coughed up from the lungs, it will end up in the stomach.

4. Quickly read over all the first aid measures to be administered. Verify that you are on the appropriate colored page by again locating the chemical in the table heading the section.

5. Abide by the advice given and follow it in sequence. ALWAYS REMEMBER TO FIRST TAKE THE NECESSARY PRECAUTIONS TO PROTECT YOURSELF FROM EXPOSURE. Remember that sometimes two poisonous effects may occur simultaneously or consecutively. For example:
   a. Splashing with caustic soda lye may affect both the eyes and skin on the arms. In this case, the eyes must take first priority as far as treatment is concerned. Treat them first and then undress the victim under the shower. See the **GOLDEN RULES** on page 8.
   b. A splash of chlorinated solvent soaks a trouser leg. A risk of inhalation can be secondarily associated with the skin contact. The first respondent will take the appropriate action: that is, remove the contaminated clothing to the open air, flush the skin with water and warn those around of the danger.

6. Follow these Golden Rules:

GOLDEN RULES

1. Protect yourself from exposure
2. Terminate the victim's exposure and decontaminate.
3. Always treat the most urgent symptom or sign first:
   - Cessation of breathing
   - Heart not beating
   - Eye injury
   - Skin contact
   - Shock
4. Call for help.

V. CONCLUSIONS

The *First Aid Manual for Chemical Accidents* is written in clear, concise language using lay terms. It should always be available and ready to be consulted immediately. Familiarize yourself with its contents and organization now, so that you can use it quickly and with assurance. It is intended to contribute to saving lives, if possible; to lessen the suffering of victims of chemical accidents; and to minimize the after effects of exposure.

First respondents will earn the gratitude of the people they help, the esteem of health care professionals, and above all, they will cherish the unforgetable feeling of having unselfishly and competently helped a fellow human being in a moment of tremendous need. We hope that this small book will be carefully read and its message clearly understood.

NOTE

These signs and symptoms are only descriptive of situations involving sudden, intense exposure. Low level, chronic exposure frequently causes a much different set of signs and symptoms and requires different treatment. Absence of the signs and symptoms described here in no way implies that chronic illness due to long-term, low-level exposure is not occurring.

Many of the chemicals listed in this book are known or suspected human carcinogens. Paradoxically, some of these carcinogens have few or mild acute effects. Attention here is always given to decreasing absorption of these chemicals by inducing vomiting or by flushing. A physician should evaluate each of these cases no matter how trivial the exposure seems. The physician will decide on further action in terms of follow-up exams and precautions.

Always refer every victim to a physician for evaluation after administering first aid as described in this book.

CHEMICAL INDEX

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
A	Acetaldehyde	1	1	2	1	1	00075-07-7
	Acetic Acid	1	1	1	1	1	00064-19-7
	Acetic Anhydride	1	1	1	1	1	00108-24-7
	Acetone	8	3	12	6	5	00067-64-1
	Acetone Cyanohydrin	25	8	11	8	5	00075-86-5
	Acetonitrile	25	8	11	8	5	00075-05-8
	Acetylene	6	3	0	5	4	00074-86-2
	Acrolein	1	1	2	1	1	00107-02-8
	Acrylamide	17	4	2	6	5	00079-06-1
	Acrylonitrile	25	8	11	8	5	00107-13-1
	Adiponitrile	25	8	11	8	5	00111-69-3
	Aldicarb	23	3	2	11	9	00116-06-3
	Aldrin	31	5	5	2	5	00309-00-2
	Aliphatic Alcohols—Amyl	8	3	12	6	5	00071-41-0
	Aliphatic Alcohols—Butyl	8	3	12	6	5	00071-36-3
	Aliphatic Amines	19	1	3	4	2	00095-38-5
	Alkali Dichromates	3	7	2	2	6	
	Alkali Meta-Borates	3	7	2	2	6	
	Alkanes (gasses, C_1 to C_4)	6	3	0	5	4	
	Alkanes (liquids/solids)	29	2	10	6	6	08002-74-2
	Allyl Alcohol	17	4	2	6	5	00107-18-6
	Allyl Chloride	17	4	2	6	5	00107-05-1
	Allyl Glycidyl Ether	17	4	2	6	5	00106-92-3
	Allyl Propyl Disulfide	17	4	2	6	5	02179-59-1
	Aluminum (dust)	14	6	10	7	7	07429-90-5
	Aluminum Alkyls	28	6	0	10	8	
	Aluminum Chloride	3	7	2	2	6	07446-70-0
	Aluminum Hydrate	14	6	10	7	7	21645-51-2
	Aluminum Hydroxide	14	6	10	7	7	21645-51-2
	Aluminum Oxide	14	6	10	7	7	01344-28-1
	Aluminum Trichloride	3	7	2	2	6	07446-70-0
	Aminopyridine	31	5	5	2	5	00504-29-0
	Ammonia	19	1	3	4	2	07664-41-7
	Ammonium Carbonate	20	2	3	9	3	00506-87-6
	Ammonium Chlorate	12	2	8	2	6	12125-02-9

(continued)

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
	Ammonium Hydroxide	19	1	3	4	2	01336-21-6
	Ammonium Perchlorate	12	2	8	2	6	07790-98-9
	Ammonium Sulfide	4	1	3	1	1	12124-99-1
	Amyl Acetate	8	3	12	6	5	00628-63-7
	Aniline	11	4	7	6	3	00062-53-3
	Anisidines (ortho)	11	4	7	6	3	00092-15-9
	Anisidines (para)	11	4	7	6	3	00104-94-9
	Antimony and Compounds	21	1	2	1	1	07440-36-0
	Arsenic	21	1	1	2	6	07440-38-2
	Arsenic Trichloride	21	1	1	1	1	07784-34-1
	Arsenicals	21	1	1	1	1	
	Arsine	21	1	0	1	1	07784-42-1
	Asbestos	14	6	10	7	7	01332-21-4
	Asphalt Fumes	29	2	0	6	6	
B	Barium (soluble salts)	10	2	6	2	6	07440-39-3
	Barium Acetate	10	2	6	2	6	00543-80-6
	Barium Carbonate	10	2	6	2	6	00513-77-9
	Barium Chloride	10	2	6	2	6	10361-37-2
	Barium Fluoride	10	2	1	3	1	07787-32-8
	Barium Hydroxide	10	2	6	2	6	17194-00-2
	Barium Nitrate	10	2	6	2	6	10022-31-8
	Barium Oxide	10	2	6	2	6	01304-28-5
	Barium Sulfide	10	2	6	2	6	21109-95-5
	Benzene	7	3	4	6	5	00071-43-2
	Benzidine	11	4	7	6	3	00092-87-5
	Benzyl Chloride	1	1	2	1	1	00100-44-7
	Bis (Chloromethyl) Ether	17	4	2	6	5	00542-88-1
	Bitter Almond Oil (Amygdalin)	25	8	11	8	5	29883-15-6
	Boric Acid	3	7	2	2	6	10043-35-3
	Boron Trifluoride	1	1	0	1	1	77637-07-2
	Bromine	1	1	1	1	1	07726-95-6
	Bromoform	9	3	5	6	5	00075-25-2
	Butadiene	6	3	0	5	4	00106-99-0
	Butane	6	3	0	5	4	00106-97-8
	Butanol	8	3	12	6	5	00075-65-0

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
	Butyl Acetate	8	3	12	6	5	00123-86-4
	Butyl Glycidyl Ether (n-)	17	4	2	6	5	02426-08-6
	Butylamine	19	1	3	4	2	00109-73-9
	Butyltoluene	9	3	5	6	5	00098-51-1
	Butyraldehyde	1	1	1	1	1	00123-72-8
C	Cadmium (dust and fumes) (metal)	3	7	2	2	6	07440-43-9
	Calcium Carbide	5	7	3	4	2	00075-20-7
	Calcium Carbonate	14	6	10	7	7	00471-34-1
	Calcium Chloride	13	6	8	2	6	10043-52-4
	Calcium Dichromate	3	7	2	2	6	
	Calcium Hydroxide	20	2	3	9	3	01305-62-0
	Calcium Hypochlorite	3	7	1	2	6	07778-54-3
	Calcium Oxide	5	7	3	4	2	01305-78-8
	Camphor	31	5	5	2	5	00076-22-2
	Caprolactam	3	7	2	2	6	00105-60-2
	Carbamates	23	3	2	11	9	14484-64-1
	Carbon	14	6	10	7	7	07440-44-0
	Carbon Black	14	6	10	7	7	01333-86-4
	Carbon Dioxide	6	3	0	5	4	00124-38-9
	Carbon Dioxide Snow	6	3	0	5	4	
	Carbon Disulfide	1	1	2	1	1	00075-15-0
	Carbon Monoxide	6	3	0	0	0	00630-08-0
	Carbon Tetrachloride	9	3	5	6	5	00056-23-5
	Cement	5	7	2	4	2	
	Cherry Laurel Water	25	0	11	8	5	
	Chlordane	31	5	5	2	5	00057-74-9
	Chlorinated Lime	3	7	2	2	6	01332-17-8
	Chlorine	1	1	1	1	1	07782-50-5
	Chlorine Dioxide	1	1	1	1	1	10049-04-4
	Chlorine Trifluoride	2	1	1	3	1	07790-91-2
	Chloro-1-Nitropropane (1-)	17	4	2	6	5	00600-25-9
	Chloroacetaldehyde	1	1	1	1	1	00107-20-0
	Chloroacetic Acid	1	1	1	1	1	00079-11-8
	Chloroacetophenone (2-)	17	4	2	6	5	00532-27-4
	Chlorobenzene	9	3	5	6	5	00108-90-7

(continued)

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
	Chlorobenzylidene Malonitrile	17	4	2	6	5	02698-41-1
	Chlorobromomethane	9	3	5	6	5	00074-97-5
	Chlorodifluoroethane	6	3	0	5	4	00075-68-3
	Chlorodifluoromethane	6	3	0	5	4	00075-45-6
	Chloroethane	9	3	5	5	4	00075-00-3
	Chlorofluoroethane	6	3	0	5	4	00075-68-3
	Chlorofluoromethane	6	3	0	5	4	00593-70-4
	Chloroform	9	3	5	6	5	00067-66-3
	Chloromethane	6	3	0	5	4	00074-87-3
	Chloronaphthalenes	29	2	10	6	6	00091-58-7
	Chloropentafluoroethane	9	3	0	6	5	00076-15-3
	Chlorophenoxy Compounds	26	4	7	6	3	
	Chloropicrin	17	4	2	6	5	00076-06-2
	Chloropropane	9	3	5	6	5	00075-29-6
	Chloropropene	9	3	5	6	5	00557-98-2
	Chlorotrifluoroethylene	6	3	0	5	4	00079-38-9
	Chlorotrifluoromethane	6	3	0	5	4	00075-72-9
	Chlorthion	23	3	2	11	9	00500-28-7
	Chromic Acid	3	7	1	2	6	07738-94-5
	Chromium Chloride	3	7	2	2	6	10025-73-7
	Copper Chloride	3	7	2	2	6	01344-67-8
	Copper Sulfate	3	7	2	2	6	07758-98-7
	Creosote	1	1	2	1	1	08001-58-9
	Creosols	1	1	2	1	1	01319-77-3
	Crotonaldehyde	1	1	2	1	1	00123-73-9
	Cumene	7	3	4	6	5	00098-82-8
	Cyanogen Bromide	25	8	11	8	5	00506-68-3
	Cyanogen Chloride	25	8	11	8	5	00506-77-4
	Cyanogen Iodine	25	8	11	8	5	00506-78-5
	Cyclohexane	7	3	4	6	5	00110-82-7
	Cyclohexanol	17	4	2	6	5	00108-93-0
	Cyclohexanone	17	4	2	6	5	00108-94-1
D	DDVP	23	3	2	11	9	00062-73-7
	DNBP	26	4	7	6	3	00088-85-7
	DNOC	26	4	7	6	3	00534-52-1

	SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
Decaborane	31	5	5	2	5	17702-41-9
Decane	7	3	4	6	5	00124-18-5
Decanol	8	3	12	6	5	00112-30-1
Demeton	23	3	2	11	9	08065-48-3
Diacetone Alcohol	8	3	12	6	5	00123-42-2
Diazinon	23	3	2	11	9	00333-41-5
Diazomethane	17	4	2	6	5	00334-88-3
Diborane	17	4	0	6	5	19273-02-1
Dibutyl Phthalate	17	4	2	6	5	00084-74-2
Dibutylamine	19	1	3	4	2	00111-92-2
Dibutyllead	18	5	9	6	6	02587-84-0
Dibutyltin	22	5	9	2	6	
Dichloro-5,5-Dimethylhydantoin	1	1	2	1	1	00118-52-5
Dichlorobenzene	9	3	5	6	5	00095-50-1
Dichlorodifluoromethane	6	3	0	5	4	00075-71-8
Dichloroethane	9	3	5	5	4	00075-34-3
Dichloroethylene	9	3	5	6	5	00540-59-0
Dichlorofluoromethane	6	3	0	5	4	00075-43-4
Dichloropropane	9	3	5	6	5	00078-87-5
Dichlorotetrafluoroethane	9	3	5	6	5	00076-14-2
Diepoxybutane	17	4	2	6	5	00564-00-1
Diethylaluminum Chloride	28	6	0	10	8	00096-10-6
Diethylaluminum Hydride	28	6	0	10	8	
Diethylamine	19	1	3	4	2	00109-89-7
Diethylaminoethanol	17	4	2	6	5	00100-37-8
Diethylene Glycol	8	3	12	6	5	00111-46-6
Diethyllead	18	5	9	6	6	15773-47-4
Diethylmercury	15	5	9	2	6	00627-44-1
Diethyltin	22	5	9	2	6	
Difluoroethanes	6	3	0	5	4	00075-37-6
Difluoroethylene	6	3	0	5	4	00075-38-7
Diglycidyl Ether	17	4	2	6	5	02238-07-5
Dihexyltin	22	5	9	2	6	
Diiododiethyltin	22	5	9	2	6	
Dimethylethylcarbinol	8	3	12	6	5	00108-82-7

(continued)

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
	Dimethyl Sulfate	1	1	1	1	1	00077-78-1
	Dimethylamine	19	1	3	4	2	00124-40-3
	Dimethylaniline	11	4	7	6	3	00121-69-7
	Dimethylhydrazine (1,1-)	31	5	5	2	5	00057-14-7
	Dimethylmercury	15	5	9	2	6	00593-74-8
	Dimethyltin	22	5	9	2	6	
	Dinitrobenzene	11	4	7	6	3	25154-54-5
	Dinitrocresols	26	4	7	6	3	01335-85-9
	Dinitrophenols	26	4	7	6	3	00329-71-5
	Dinitrotoluene	11	4	7	6	3	00121-14-2
	Dioctyltin	22	5	9	2	6	
	Dioxane	8	3	12	6	5	00123-91-1
	Diphenyl	29	2	10	6	6	00092-52-4
	Diphenylamine	29	2	10	6	6	00122-39-4
	Dipropylamine	19	1	3	4	2	00142-84-7
	Dipterex	23	3	2	11	9	00052-68-6
	Dipyridyl Chloride	30	4	2	6	5	
	Dipyridyl Dimethyl Sulfate	30	4	2	6	5	
	Diquat	30	4	2	6	5	00085-00-7
	Disodium Phosphate	27	6	0	7	6	07558-79-4
	Dithiocarbamates	13	6	8	2	6	
E	EPN	23	3	2	11	9	02104-64-5
	Epichlorohydrin	17	4	2	6	5	00106-89-8
	Ethane	6	3	0	5	4	00074-84-0
	Ethanolamine	19	1	3	4	2	00141-43-5
	Ethyl Acetate	8	3	12	6	5	00141-78-6
	Ethyl Acrylate	17	4	2	6	5	00140-88-5
	Ethyl Alcohol	8	3	12	6	5	00064-17-5
	Ethyl Chloroformate	1	1	2	1	1	00541-41-3
	Ethyl Ether	6	3	4	5	4	00060-29-7
	Ethyl Fluoride	6	3	0	5	4	00353-36-6
	Ethyl Nitrate	26	4	7	6	3	00625-58-1
	Ethylamine	19	1	3	4	2	00075-04-7
	Ethylbenzene	8	3	12	6	5	00100-41-4
	Ethylene	6	3	0	5	4	00074-85-1
	Ethylene Chlorohydrin	8	3	12	6	5	00107-07-3

	SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
Ethylene Dichloride	9	3	5	5	4	00107-06-2
Ethylene Glycol	8	3	12	6	5	00107-21-1
Ethylene Glycol Dinitrate	26	4	7	6	3	00628-96-6
Ethylene Glycol Monomethyl Ether	8	3	12	6	5	00109-86-4
Ethylene Oxide	17	4	2	6	5	00075-21-8
Ethyleneimine	17	4	2	6	5	00151-56-4
Ethylhexyl Acetate	8	3	12	6	5	00103-09-3
Ethylmercuric Chloride	15	5	9	2	6	00107-27-7
Ethylmercuric Hydroxide	15	5	9	2	6	
Ethylmercury	15	5	9	2	6	
Ferricyanides	25	8	11	8	5	
Ferrocyanides	25	8	11	8	5	
Fibrous Glass	14	6	10	7	7	14808-60-7
Fluorine	2	1	1	3	1	07782-41-4
Fluoromethane	6	3	0	5	4	00593-53-3
Fluosilicic Acid	2	1	1	3	1	01309-45-1
Formaldehyde	1	1	2	1	1	00050-00-0
Formic Acid	1	1	1	1	1	00064-18-6
Freon 11	6	3	0	5	4	00075-69-4
Freon 12	6	3	0	5	4	00075-71-8
Freon 13	6	3	0	5	4	00075-72-9
Freon 14	6	3	0	5	4	00075-73-0
Freon 21	6	3	0	5	4	00075-43-4
Freon 22	6	3	0	5	4	00075-45-6
Freon 112	9	3	5	6	5	00076-12-0
Freon 113	9	3	5	6	5	00076-13-1
Freon 114	9	3	5	6	5	00076-14-2
Freon 115	9	3	5	6	5	00076-15-3
Freon 116	6	3	0	5	4	00076-16-4
Freon 142b	6	3	0	5	4	00075-68-3
Freon 143	6	3	0	5	4	
Freon 151a	6	3	0	5	4	
Freon 152a	6	3	0	5	4	
Furfural	17	4	2	6	5	00098-01-1
Furfural Alcohol	8	3	12	6	5	00098-00-0

(*continued*)

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
G	Gasoline	7	3	4	6	5	08006-61-9
	Glutaraldehyde	17	4	2	6	5	00111-30-8
	Glycerin	8	3	12	6	5	00056-81-5
	Glycidol	17	4	2	6	5	00556-52-5
	Glycidyl Acrylate	17	4	2	6	5	00106-90-1
	Gramoxone	30	4	2	6	5	04685-14-7
H	Halothane	9	3	5	6	5	00074-96-4
	Heptane	7	3	4	6	5	00142-82-5
	Heptanol	8	3	12	6	5	00543-49-7
	Hexachlorobenzene	29	2	10	6	6	00118-74-1
	Hexachloroethane	9	3	5	6	5	00067-72-1
	Hexafluoroethane	6	3	0	5	4	00076-16-4
	Hexane	7	3	4	6	5	00110-54-3
	Hexanol	8	3	12	6	5	00111-27-3
	Hydrazine	31	4	5	6	5	00302-01-2
	Hydriodic Acid	1	1	1	1	1	10034-85-2
	Hydrochloric Acid	1	1	1	1	1	07647-01-0
	Hydrocyanic Acid	25	8	11	8	5	00074-90-8
	Hydrofluoric Acid	2	1	1	3	1	07664-39-3
	Hydrogen Bromide	1	1	1	1	1	10035-10-6
	Hydrogen Chloride	1	1	1	1	1	07647-01-0
	Hydrogen Peroxide	1	1	1	1	1	07722-84-1
	Hydrogen Selenide	4	1	0	1	1	07783-07-5
	Hydrogen Sulfide	4	1	0	1	1	07783-06-4
	Hydroquinone	11	4	7	6	3	00123-31-9
I	Iodine	1	1	2	1	1	07553-56-2
	Iron Chloride	3	7	2	2	6	07758-94-3
	Isobutyl Acetate	8	3	12	6	5	00110-19-0
	Isobutyraldehyde	1	1	1	1	1	00078-84-2
	Isobutyronitrile	25	8	11	8	5	00078-82-0
	Isopestox	23	3	2	11	9	00371-86-8
	Isopropyl Acetate	8	3	12	6	5	00108-21-4
	Isopropyl Alcohol	8	3	12	6	5	00067-63-0
	Isopropylamine	19	1	3	4	2	00075-31-0
K	Kaolin	14	6	10	7	7	01332-58-7
	Ketene	17	4	0	6	5	00463-51-4

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
L	Lead (dust and fumes)	24	6	2	2	6	07439-92-1
	Lead Acetate	24	6	2	2	6	15347-57-6
	Lead Antimonate	24	6	2	2	6	
	Lead Arsenate	24	6	2	2	6	07784-40-9
	Lead Carbonate	24	6	2	2	6	00598-63-0
	Lead Chromate	24	6	2	2	6	18454-12-1
	Lead Chromate (yellow)	24	6	2	2	6	07758-97-6
	Lead Dioxide	24	6	2	2	6	01309-60-0
	Lead Nitrate	24	6	2	2	6	10099-74-8
	Lead Oleate	18	5	9	6	6	01120-46-3
	Lead Oxide (PbO)	24	6	2	2	6	01309-60-0
	Lead Oxide (red)	24	6	2	2	6	01314-41-6
	Lead Oxychloride	24	6	2	2	6	
	Lead Phenate	18	5	9	6	6	
	Lead Phthalate	18	5	9	6	6	
	Lead Stearate	18	5	9	6	6	07428-48-0
	Lead Subacetate	24	6	2	2	6	01335-32-6
	Lead Sulfide	24	6	2	2	6	01314-87-0
	Leptophos	23	3	2	11	9	21609-90-5
	Lime	5	7	3	4	2	01305-78-8
	Lindane	31	5	5	2	5	00058-89-9
	Liquified Petroleum (LP) Gas	6	3	4	5	4	68476-85-7
	Lithium Carbonate	20	2	3	9	3	00554-13-2
	Lithium Hydride	20	2	3	9	3	07580-67-8
M	Magnesium Chloride	27	6	0	7	6	07786-30-3
	Magnesium Sulfate	27	6	0	7	6	07487-88-9
	Malathion	23	3	2	11	9	00121-75-5
	Maleic Anhydride	1	1	2	1	1	00108-31-6
	Malononitrile	25	8	11	8	5	00109-77-3
	Mercuric Chloride	16	5	2	2	6	07487-94-7
	Mercuric Iodine (red)	16	5	2	2	6	07774-29-0
	Mercurous Chloride	16	5	2	2	6	07546-30-7
	Mercurous Iodide	16	5	2	2	6	07783-30-4
	Mercury (metal)	16	5	2	2	6	07439-97-6

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	SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
Mercury (organic compounds)	15	5	9	2	6	
Mercury (soluble salts)	16	5	2	2	6	07439-97-6
Mercury Acetate	16	5	2	2	6	00631-60-7
Mercury Fulminate	15	5	9	2	6	00628-86-4
Mercury Nitrate	16	5	2	2	6	10045-94-0
Mercury Oxycyanide	16	5	2	2	6	01335-31-5
Methacrylonitrile	25	8	11	8	5	00126-98-7
Methane	6	3	0	5	4	00074-82-8
Methyl Acetate	8	3	12	6	5	00079-20-9
Methyl Acrylate	17	4	2	6	5	00096-33-3
Methyl Alcohol	8	3	12	6	5	00067-56-1
Methyl Bromide	17	4	0	6	5	00074-83-9
Methyl n-Butyl Ketone	8	3	12	6	5	00591-78-6
Methyl Chloride	6	3	0	5	4	00074-87-3
Methyl Chloroformate	1	1	3	1	1	00079-22-1
Methyl Ethyl Ketone	8	3	12	6	5	00078-93-3
Methyl Isoamyl Ketone	8	3	12	6	5	00110-12-3
Methyl Isobutyl Ketone	8	3	12	6	5	00108-10-1
Methyl Isocyanate	17	4	2	6	5	00624-83-9
Methyl Isopropyl Ketone	8	3	12	6	5	00563-80-4
Methyl Mercaptan	4	1	0	1	1	00074-93-1
Methyl Methacrylate Monomer	17	4	2	6	5	00080-62-6
Methyl Nitrate	26	4	7	6	3	00598-58-3
Methyl Parathion	23	3	2	11	9	00298-00-0
Methylamine	19	1	3	4	2	00074-89-5
Methylchloroform	9	3	5	6	5	00071-55-6
Methylene Chloride	9	3	5	5	4	00075-09-2
Methylene Fluoride	6	3	0	5	4	
Methylenebis (Phenyl Isocyanate)	17	4	2	6	5	00101-68-8
Methylmercury	15	5	9	2	6	22967-92-6

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
	Methylmercury Phosphate	15	5	9	2	6	32787-94-3
	Milk of Lime	20	0	3	9	2	
	Monomethylhydrazine	11	4	7	6	3	00060-34-4
N	Naphthalene	11	4	7	6	3	00091-20-3
	Naphthylamines	11	4	7	6	3	00091-59-8
	Naptha	7	3	4	6	5	08030-30-6
	Nickel (fumes and dust)	17	4	2	6	5	07440-02-0
	Nickel Carbonyl	17	4	2	6	5	13463-39-3
	Nitric Acid	1	1	1	1	1	07697-37-2
	Nitric Oxide	1	1	0	1	1	10102-43-9
	Nitroanilines	11	4	7	6	3	00100-01-6
	Nitrobenzene	11	4	7	6	3	00098-95-3
	Nitrochlorobenzene (p-)	11	4	7	6	3	00100-00-5
	Nitrocresolic Herbicides	26	4	7	6	3	
	Nitroferricyanides (salts)	25	8	11	8	5	
	Nitrogen	6	3	0	5	4	07727-37-9
	Nitrogen Dioxide	1	1	1	1	1	10102-44-0
	Nitrogen Trifluoride	1	1	0	3	1	07783-54-2
	Nitroglycerine	26	4	7	6	3	00055-63-0
	Nitromethane	7	3	4	6	5	00075-52-5
	Nitrophenolic Herbicides	26	4	7	6	3	00554-84-7
	Nitrophenols	26	4	7	6	3	00554-84-7
	Nitrotoluene	11	4	7	6	3	00088-72-2
	Nonane	7	3	4	6	5	00111-84-2
O	OMPA	23	3	2	11	9	00152-16-9
	Octane	7	3	4	6	5	00111-86-4
	Organochlorines	31	5	5	2	5	
	Organophosphate Compounds	23	3	2	11	9	
	Osmic Acid	1	1	1	1	1	20816-12-0

	SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
Paraoxon	23	3	2	11	9	00311-45-5
Paraquat	30	4	5	6	5	01910-42-5
Parathion	23	3	2	11	9	00056-38-2
Pentaborane	31	5	5	2	5	19624-22-7
Pentachloroethane	9	3	5	6	5	00076-01-7
Pentachlorophenate	26	4	7	6	3	00087-86-5
Pentachlorophenol	26	4	7	6	3	00087-86-5
Pentane	7	3	4	6	5	00109-66-0
Pentanol	8	3	12	6	5	06032-29-7
Peracetic Acid	1	1	1	1	1	00079-21-0
Perborates	3	7	2	2	6	
Perchloric Acid	1	1	1	1	1	07601-90-3
Perchloromethyl Mercaptan	17	4	2	6	5	00594-42-3
Perchloryl Fluoride	1	1	0	3	1	07616-94-6
Petroleum Ethers	7	3	4	6	5	08030-30-6
Phenol	1	1	1	1	1	00108-95-2
Phenylenediamine (p-)	1	1	2	1	1	00106-50-6
Phenylhydrazine	11	4	7	6	3	00100-63-0
Phenylhydroxylamine	11	4	7	6	3	00100-65-2
Phenylmercuric Acetate	15	5	9	2	6	00062-38-4
Phenylmercury	15	5	9	2	6	
Phenylmercury Oleate	15	5	9	2	6	
Phenylnaphthylamine	11	4	7	6	3	00135-88-6
Phorate	23	3	2	11	9	00298-02-2
Phosdrin	23	3	2	11	9	07786-34-7
Phosgene	1	1	0	1	1	00075-44-5
Phosphine	21	1	0	1	1	07803-51-2
Phosphoric Acid	1	1	1	1	1	07664-38-2
Phosphoric Ester	23	3	2	11	9	
Phosphorus	21	1	1	1	1	07723-14-0
Phosphorus Chlorides	21	1	1	1	1	10025-87-3
Phosphorus Pentachloride	21	1	1	1	1	10026-13-8
Phosphorus Pentasulfide	4	1	0	1	1	01314-80-3
Phosphorus Trichloride	21	1	1	1	1	07719-12-2
Phthalic Anhydride	3	7	2	2	6	00085-44-9
Picric Acid	17	4	2	6	5	00088-89-1
Platinum and Compounds	3	7	2	2	6	07440-06-4

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
	Polybrominated Biphenyls (PBBs)	29	2	10	6	6	36355-01-8
	Polychlorinated Biphenyls (PCBs)	29	2	10	6	6	01336-36-3
	Polyvinyl Chloride	14	6	10	7	7	00075-01-4
	Potassium	5	7	3	4	2	07440-09-7
	Potassium Carbonate	20	2	3	9	3	00584-08-7
	Potassium Chlorate	12	2	8	2	6	03811-04-9
	Potassium Chloride	13	6	8	2	6	07477-40-7
	Potassium Chlorite	1	1	1	1	1	
	Potassium Chromate	3	7	2	2	6	07789-00-6
	Potassium Cyanide	25	8	11	8	5	00151-50-8
	Potassium Dichromate	3	7	2	2	6	07778-50-9
	Potassium Fluoride	2	1	1	3	1	07789-23-3
	Potassium Fluosilicate	2	7	1	3	1	16871-90-2
	Potassium Hydroxide	5	7	3	4	2	01310-58-3
	Potassium Oxide	5	7	3	4	2	
	Potassium Perchlorate	12	2	8	2	6	07778-74-7
	Propane	6	3	0	5	4	00074-98-6
	Propionaldehyde	1	1	1	1	1	00123-38-6
	Propyl Acetate	8	3	12	6	5	00109-60-4
	Propyl Alcohol	8	3	12	6	5	00071-23-8
	Propyl Nitrate	26	4	7	6	3	00627-13-4
	Propylamine	19	1	3	4	2	00107-10-8
	Propylene	6	3	0	5	4	00115-07-1
	Propylene Glycol	8	3	12	6	5	00057-55-6
	Propylene Glycol Monomethyl Ether	17	4	2	6	5	00107-98-2
	Propylene Oxide	17	4	2	6	5	00075-56-9
	Pyrethrins	17	4	2	6	5	
Q	Quaternary Ammonium Compounds	30	4	2	6	5	
	Quinone	1	1	2	1	1	00106-51-4
R	Resorcinol	1	1	1	1	1	00108-46-3
	Ronnel	23	3	2	11	9	00299-84-3

(continued)

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
S	Selenium Hexafluoride	4	1	0	1	1	07783-79-1
	Silane	1	1	0	1	1	07803-62-5
	Silica	14	6	10	7	7	07631-86-9
	Sodium	5	7	3	4	2	07440-23-5
	Sodium Bicarbonate	13	6	8	2	6	00144-55-8
	Sodium Borate	3	7	2	2	6	01303-96-4
	Sodium Carbonate	20	2	3	9	3	00497-19-8
	Sodium Chlorate	12	2	8	2	6	07775-09-9
	Sodium Chloride	13	6	8	2	6	07647-14-5
	Sodium Chlorite	1	1	1	1	1	07758-19-2
	Sodium Chromate	3	7	2	2	6	10034-82-9
	Sodium Cyanide	25	8	11	8	5	13998-03-3
	Sodium Dichromate	3	7	2	2	6	07789-12-0
	Sodium Fluoride	2	1	1	3	1	07681-49-4
	Sodium Fluosilicate	2	7	1	3	1	16893-85-9
	Sodium Hydroxide	5	7	3	4	2	01310-73-2
	Sodium Hypochlorite	3	7	2	2	6	07681-52-9
	Sodium Oxide	5	7	3	4	2	01313-59-3
	Sodium Perchlorate	12	2	8	2	6	07601-89-0
	Sodium Peroxide	5	7	3	4	2	01313-60-6
	Sodium Silicate	20	2	3	9	3	06834-92-0
	Sodium Sulfate	27	6	0	7	6	07767-82-6
	Sodium Thiocyanate	27	6	0	8	5	00540-72-7
	Sodium Thiosulfate	27	6	0	7	6	07772-98-7
	Stibine	21	1	0	1	1	07803-52-3
	Stoddard Solvent	7	3	4	6	5	08052-41-3
	Styrene	17	4	2	6	5	00100-42-5
	Sulfotepp	23	3	2	11	9	03689-24-5
	Sulfur Dioxide	1	1	1	1	1	07446-09-5
	Sulfur Trioxide	1	1	1	1	1	07446-11-9
	Sulfuric Acid	1	1	1	1	1	07664-93-9
	Sulfurous Acid	1	1	1	1	1	07782-99-2
T	TEPP	23	3	2	11	9	00107-49-3
	Talc	14	6	10	7	7	14807-96-6
	Tellurium Hexafluoride	1	1	0	1	1	07783-80-4
	Tetrabutyltin	22	5	9	2	6	01461-25-2
	Tetrachlorodifluoroethane	9	3	5	6	5	00076-11-9

	SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
Tetrachloroethane	9	3	5	6	5	00079-34-5
Tetrachloroethylene	9	3	5	6	5	00127-18-4
Tetraethyllead	18	5	9	6	6	00078-00-2
Tetraethyltin	22	5	9	2	6	00597-64-8
Tetrafluoroethylene	6	3	0	5	4	00116-14-3
Tetrafluoromethane	6	3	0	5	4	00075-73-0
Tetraisoalkyltin	22	5	9	2	6	
Tetramethyl Succinonitrile	25	8	11	8	5	03333-52-6
Tetramethyllead	18	5	9	6	6	00075-74-1
Tetranitromethane	11	4	7	6	3	00509-14-8
Tetrapentyltin	22	5	9	2	6	
Tetrapropyltin	22	5	9	2	6	02176-98-9
Tetryl	17	4	2	6	5	00479-45-8
Thiocarbamates	13	6	8	2	6	
Titanium (dust and fumes)	14	6	10	7	7	07440-32-6
Titanium Chlorides	3	7	2	2	6	07550-45-0
Titanium Dioxide	14	6	10	7	7	13463-67-7
Toluidine (o-)	11	4	7	6	3	00119-93-7
Toluene	7	3	4	6	5	00108-88-3
Toluene 2,4-di-Isocyanate	17	4	2	6	5	00584-84-9
Toluene 2,6-di-Isocyanate	17	4	2	6	5	00091-08-7
Toluidine	11	4	7	6	3	00095-53-4
Tributyl Phosphate	1	1	2	1	1	00126-73-8
Tributyllead	18	5	9	6	6	
Tributyltin	22	5	9	2	6	
Trichloroacetic Acid	1	1	1	1	1	00076-03-9
Trichloroethane	9	3	5	6	5	00079-00-5
Trichloroethylene	9	3	5	6	5	00079-01-6
Trichlorofluoromethane	6	3	0	5	4	00075-69-4
Trichlorofluoroethane	9	3	5	6	5	00076-13-1
Triethylaluminum	28	6	0	10	8	00097-93-8
Triethylamine	19	1	3	4	2	00121-44-8
Triethylene Glycol	8	3	12	6	5	00112-27-6
Triethyllead	18	5	9	6	6	00562-95-8
Trifluoroethane	6	3	4	5	4	27987-06-0

(continued)

		SYMPTOMS	INHALATION	INGESTION	SKIN	EYES	CAS NUMBER
	Trifluoromethane	6	3	0	5	4	00075-46-7
	Triisobutylaluminum	28	6	0	10	8	00100-99-2
	Trimellitic Anhydride	3	7	2	2	6	00552-30-7
	Trimethylaluminum	28	6	0	10	8	00075-24-1
	Trimethylamine	19	1	3	4	2	00075-50-3
	Trimethyllead	18	5	9	6	6	07442-13-9
	Trimethyltin	22	5	9	2	6	
	Trinitrobenzene	11	4	7	6	3	00099-35-4
	Trinitrotoluene	11	4	7	6	3	00118-96-7
	Triphenyltin	22	5	9	2	6	00892-20-6
	Tripropyltin	22	5	9	2	6	00761-44-4
	Trisodium Phosphate	20	2	3	9	3	07601-54-9
	Trithion	23	3	2	11	9	00786-19-6
	Tungsten Carbide	14	6	10	7	7	12070-12-1
	Turpentine	7	3	4	6	5	08006-64-2
U	Uranium Compounds	3	7	2	2	6	07440-61-1
V	Vanadium and Compounds	3	7	2	2	6	07440-62-2
	Vinyl Acetate	8	3	12	6	5	00108-05-4
	Vinyl Chloride	9	3	0	6	5	00075-01-4
	Vinyl Fluoride	6	3	0	5	4	00075-02-5
	Vinylidene Chloride	9	3	5	5	4	00075-35-4
	Vinylidene Fluoride	6	3	0	5	4	00075-38-7
X	Xylene	7	3	4	6	5	01330-20-7
	Xylidine	11	4	7	6	3	00095-68-1
Y	Yttrium and Compounds	14	6	10	7	7	10361-92-9
Z	Zinc Chloride	3	7	2	2	6	07646-85-7