

# **NLM Resources for Emergency Responders**

**NASA Symposium**

**The Role of Information Services for  
Emergency Preparedness and Response**

**July 20, 2006**

**Jack Snyder, MD**

**Associate Director**

**Specialized Information Services Division**

**National Library of Medicine/NIH/HHS**



United States  
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National Institutes of Health



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# Toxicology and Environmental Health Program

- provide core toxicology and environmental health information resources and services



- facilitate access to toxicology and environmental health information



- ▶ Health Information
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- 
- ▶ Human Genome Resources
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## Toxicology and Environmental Health

### TOXNET

Databases in toxicology and environmental health.

TOXLINE	HSDB	ChemIDplus
DART	TRI	IRIS
GENE-TOX	CCRIS	ITER

### TOXMAP NEW

Geographic representation of Toxics Release Inventory (TRI) data.

### WISER - Wireless Information System for Emergency Responders NEW

PDA application to assist first responders during hazardous materials incidents.

### Haz-Map

Database on hazardous chemicals and occupational diseases.

### ALTBIB

References about alternatives to the use of live animals in biomedical research and testing.

### Internet Resources

Evaluated links to Internet resources on current issues including, [Indoor and Outdoor Air Pollution](#), [Chemical Warfare Agents](#), and [Toxicogenomics](#).

### Consumer Health

#### Tox Town

An interactive guide to commonly encountered toxic substances.

#### Household Products Database

Health & safety information on consumer household products.

#### MedlinePlus

[Poisoning, Toxicology and Environmental Health](#)

#### DIRLINE

Over 10,000 health organizations.

#### Health Hotlines

Toll-free numbers to 300 organizations.

### MEDLINE/PubMed

References from more than 4,600 biomedical journals, including the [Toxicology Subset](#)

### Other Resources

#### Chemical Information

#### Selected Toxicology Links

#### Education and Career Links

#### Reference Materials

- Bibliographies, glossary, reports
- [Review of PDA Applications in Toxicology and Environmental](#)

# HSDB – Hazardous Substances Data Bank

*comprehensive peer-reviewed information on hazardous chemical substances*

Includes...

- Human exposure symptoms
- Physical properties
- Emergency handling procedures
- Environmental fate

HSDB Search Results - Frameset - Microsoft Internet Explorer provided by National Institutes of Health

Address: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~WVWq3:1>

HSDB

Next Item Search Results Basic Search Details Other Files Modify Search

Download Limits Browse Index Help

TOXNET Home

Item 1 of 8

Contents

Contract all categories Expand all categories

Select Clear

- FULL RECORD
- Human Health Effects
- Emergency Medical Treatment
- Animal Toxicity Studies
- Metabolism/Pharmacokinetics
- Pharmacology
- Environmental Fate & Exposure
- Environmental Standards & Regulations
- Chemical/Physical Properties
- Chemical Safety & Handling
- Manufacturing/Use Information
- Laboratory Methods
- Special References
- Synonyms and Identifiers
- Administrative Information

**PHOSPHONOTHIOIC ACID, METHYL-,S-(2-(BIS(1-METHYLETHYL) AMINO)ETHYL) O-ETHYL ESTER**  
CASRN: 50782-69-9  
*For other data, click on the Table of Contents*

**Human Health Effects:**

**Human Toxicity Excerpts:**

Cholinesterase inhibitor; more potent than sarin.  
[Budavari, S. (ed.). The Merck Index - Encyclopedia of Chemicals, Drugs and Biologicals. Rahway, NJ: Merck and Co., Inc., 1989. 1582]\*\*PEER REVIEWED\*\*

**VX** is estimated to be about three times as potent a respiratory agent as sarin, but about a hundred times as a percutaneous agent.  
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984.,p. V5 398 (1979)]\*\*PEER REVIEWED\*\*

Long-term observation of workers engaged into production of **VX** chemical diagnosed slow progressing manifestation of chronic occupational poisoning with the chemical. The characteristic nervous, digestive, locomotory, visual and cardiovascular symptoms were revealed. The authors presented laboratory and instrumental data on the cases. As the treatment appeared ineffective, further adjustment and improvement of the therapy is required. The article demonstrated the main underlying metabolic disorders that could be addressed by the pathogenetic therapy.  
[Gur'eva LM et al; Med Tr Prom Ekol (6): 7-11 (1997)]\*\*PEER REVIEWED\*\*

**Medical Surveillance:**

# **HSDB – Hazardous Substances Data Bank**

## ***Sources of information in HSDB***

- **DOT 2000 Emergency Response Guidebook**
- **U.S. Coast Guard, CHRIS – Hazardous Chemical Data**
- **NFPA Fire Protection Guide to Hazardous Materials**
- **NIOSH Pocket Guide to Chemical Hazards**
- **EPA Integrated Risk Information System (IRIS)**
- **POISINDEX(R) Information System, Micromedex, Inc., CCIS**
- **TOMES(R) Information System, Micromedex, Inc., CCIS**
- **ACGIH Guidelines Select of Chem Protect Clothing**
- **American Conference of Governmental Industrial Hygienists, TLVs & BEIs**
- **Association of American Railroads, Emergency Handling of Hazardous Materials in Surface Transportation, Association of American Railroads, Bureau of Explosives**
- **and many others....**

# Local HAZMAT Team

*Getting Right Information at Right Time*

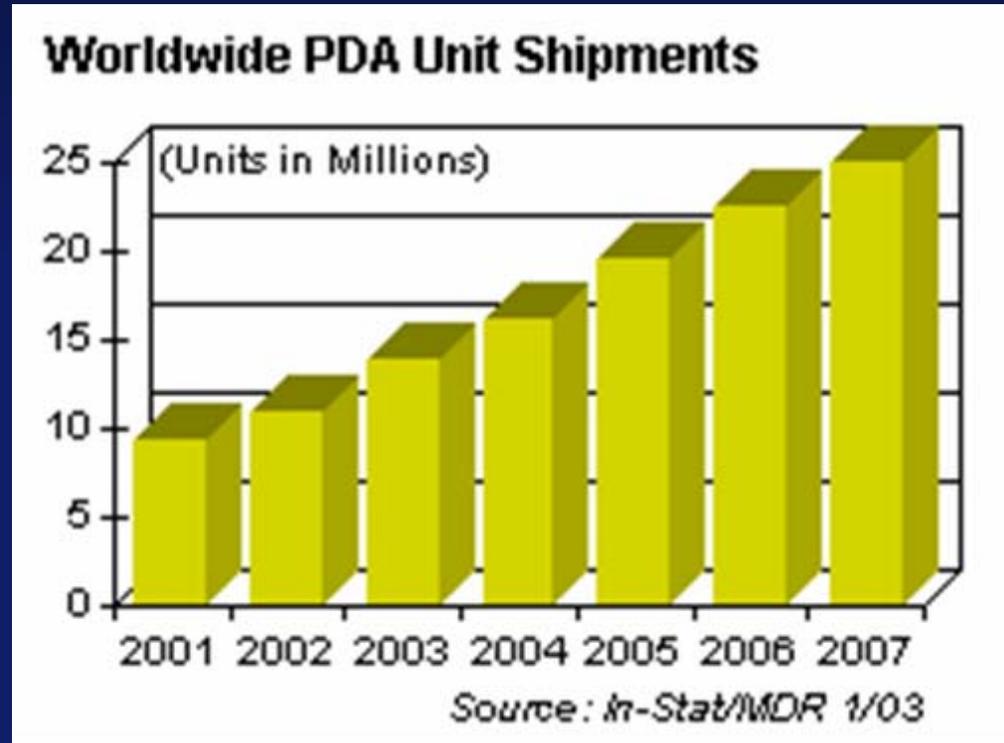
## Emergency Responders

- First Responders (first on scene)
- HAZMAT Specialist Teams
- EMS Personnel
- Incident Commanders
- Law Enforcement
- Military Personnel



# Handheld devices

- Growing in power and capability
- Getting cheaper
- Critical information available anywhere
- Stand-alone or Wireless mode
- Highly portable



# **WISER**

*Wireless Information System for Emergency Responders*

## **Strategic Objectives**

- Easy navigation, intuitive
- Information tailored to the specific role of the emergency responder
- Focus on unknown substance identification capabilities
- Provide a platform that can be expanded to support other emergency response needs
- Rich, stand-alone capability with enhanced connected (wireless) capabilities
- Cross-platform, multi-device architecture

# WISER Development Approach

User Needs



Field Testing

Baltimore Fire Department  
Fairfax Fire Department

- Mock-up
- Prototype
- Development

*Feedback*



*New Release*



# Went out and talked with ERs



## Fire-Rescue International Conference

- NLM exhibit: demoed WISER and asked questions
- over 16,000 attendees



## International Hazardous Materials Response Team Conference

- Workshop
- Exhibit



**UNLV Institute for Security Studies - hosted a focus group**  
Attendees from: Bechtel Nevada, LV police department, DOE, UNM Medical School



## DC- area User Community Meetings

Fairfax City Fire Dept., Arlington County Fire/Police, Navy Medicine Office of Homeland Security, USUHS, CapWIN Project



## Other Venues

- Capitol Hill "Steering Committee on Telehealth and Healthcare Informatics
- Ad Hoc Demos/Presentations
- NLM exhibits / RMLs

# How did we decide what chemicals to include?

## *Review/analysis of 9 list sources of chemical “nasties”*

- **Extremely Hazardous Substances List (EPA) – 358**
- **Medical Management Guidelines (ATSDR) – 56**
- **Tox Profiles, ToxFAQs and Public Health Statements (ATSDR) - 269**
- **National Priorities List (ATSDR, EPA) – 275**
- **NIOSH Pocket Guide to Chemical Hazards – 677**
- **DOT Incident Data – for 2002, 15,111 incidents with top 100 identified**
- **New Jersey Hazardous Substances Fact Sheets**
- **Local agencies and fire department incident information (e.g., Fairfax County has list of 45 most commonly responded to hazardous substances)**

# Scenario - Highway cargo tank overturned



4/23/04 - Hopkins County  
**Chemical Spill Forces Shutdown of I-30**



A huge chemical spill shuts down part of Interstate 30 Friday. It happened around 5:30 A.M. at mile marker 139, that's near the Saltillo exit, about 10 miles West of Mount Vernon.

A spokesperson for the Department of Public Safety said an 18-wheeler carrying 5,500 gal. of [redacted] crashed on the Eastbound side of the interstate. The truck caught on fire. Firefighters were able to put the fire out with minimal damage.

The crash shutdown...  
be treated for injuries...  
evacuated.

The Westbound...  
be late Friday night...

## HAZMAT Specialist is 1<sup>st</sup> on scene...

- Substance: Colorless liquid, smells like alcohol
- Symptoms: Headache, dizziness, eyes irritated, nausea feeling

# Scenario - Highway cargo tank overturned



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A huge chemical spill shuts down part of Interstate 30 Friday. It happened around 5:30 A.M. at mile marker 139, that's near the Saltillo exit, about 10 miles West of Mount Vernon.

The Department of Public Safety said an 5,500 gal. of **isopropyl alcohol** crashed off the interstate. The truck caught on fire to put the fire out with minimal damage.

The crash shutdown both sides of the interstate for a majority of the day. 17 people had to be treated for injuries due to breathing the toxic chemical, and a local school had to be evacuated.

The Westbound lanes of the interstate were opened in the afternoon, but DPS said it could be late Friday night before the eastbound lanes are opened.

**Isopropyl alcohol = Isopropanol**

# WISER Availability

- PDA Versions: Palm and Pocket PC
- Windows™ Version – laptops and desktops
- Coming...Web-based version
- From <http://wiser.nlm.nih.gov>
  - Downloadable application and databases
  - User's guide
  - Feedback form
  - Listserv sign-up
- Downloads to date (Apr 15): 12,000

# What Are They Saying?

“... thank you for making this excellent software available ...just what I have been looking for. Concise, fast, I cannot praise your efforts enough.”

*Hazmat Advisor, London Police Dept., UK*



“...put WISER on the computer at our Nurse's Station to be used by the ED staff in the event of a disaster...”

*RN, BSN, EMT-P Chicago Hospital*

“Our interest in WISER is to be able to offer even more information to paramedics at HAZMAT incidents at no cost ...”

*South African company*

“... a great resource! I shared it with my local Community Emergency Response Team (CERT). Suggest you make this known far and wide to all CERT personnel.

*MLIS, CERT member Boston Hospital*

“... a wonderful application. Congratulations ...”

*National Research Council member, Canada*



# WISER- Future Directions

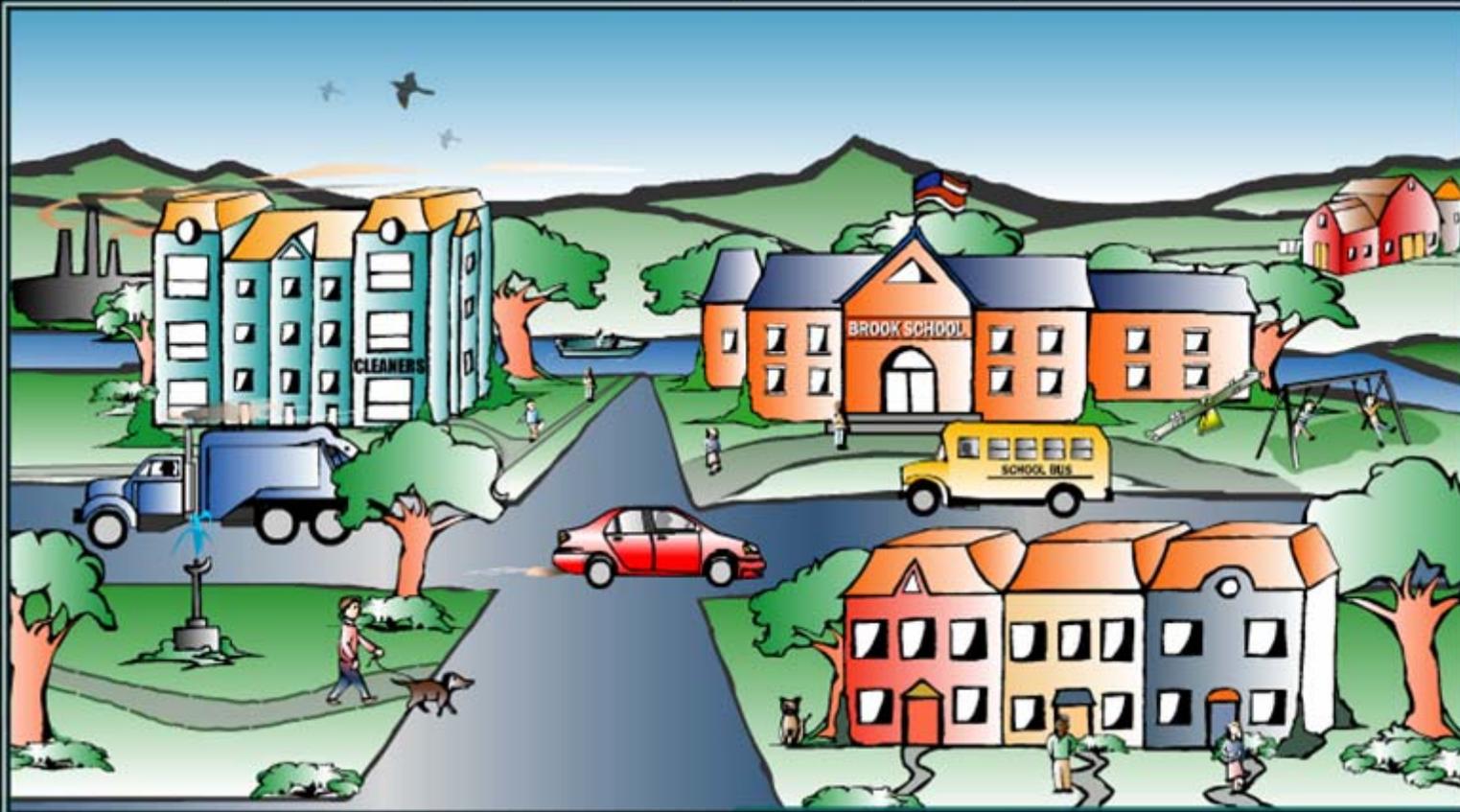
- **Enhancements**
  - Other devices in addition to Palm
  - Substance category (vs. named) data
  - Biological & radiological agent data
  - Wireless interaction and dynamic data transfer
  - User customization of data sets
- **R&D**
  - AI application for 'unknown's
    - confidence designation and relevancy ranking
    - Action oriented - workflow (SOPs)
    - Integrate with other incident factors (e.g., weather conditions, type of incident, terrain)
  - Companion web-based training 'game'
  - Integrated patient care and reporting

# NLM Hazmat-related Information Resources

- ✓ ***TOXNET*** – cluster of environmental health databases
- ✓ ***HSDB*** - Hazardous Substance Data Bank
- ✓ ***WISER*** - Wireless Information System for Emergency Responders
- **Tox Town** - Interactive guide to potentially toxic substances and environmental health issues in everyday places
- **Medline Plus** - Emergency-oriented health topics (e.g., disasters & emergency, radiation exposure, first aid, chemical weapons, emergency medical services, drug information)
- **Household Products Database** - Potential health effects of chemicals for over 5,000 common household products
- **Haz-Map** - Database on hazardous chemicals and occupational diseases
- **Special Topics** - Evaluated links to internet resources on current environmental health topics
- **TOXMAP** - Integration of mapping of EPA's Toxic Release Inventory sites integrated with chemical and bibliographic databases

# Tox Town

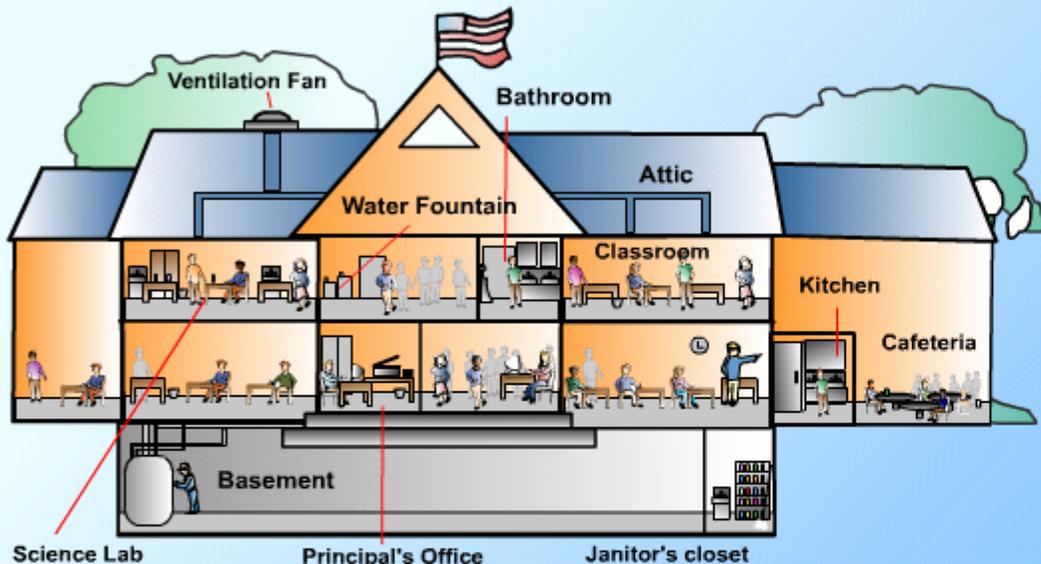
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[Arsenic](#) [Asbestos](#) [Carbon Monoxide](#) [Lead](#) [Mercury](#) [Ozone](#) [Radon](#) [Toluene](#)

**Chemical Hot Spots**



[Return to Town](#)

**School**

- [Healthy Schools](#)
  - [Chemicals at School](#)
  - Web links from MedlinePlus**  
(National Library of Medicine)
    - [Child Safety](#)
    - [Drinking Water](#)
    - [Fire Safety](#)
    - [Household Products](#)
    - [Indoor Air Pollution](#)
    - [Molds](#)
    - [Pesticides](#)
    - [Poisoning](#)
    - [School Health](#)
    - [Secondhand Smoke](#)
  - [Healthy School Environments](#)  
(Environmental Protection Agency)
  - [Environmental Virtual Campus](#)  
(Massachusetts Institute of Technology)
- Text Version**

Topic last reviewed 2/15/05

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## Fire Safety



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### Overviews

- [Fire](#) (American Red Cross)
- [Fire Safety](#) (Nemours Foundation)  
Also available in: [Spanish](#)
- [Your Home Fire Safety Checklist](#) (Consumer Product Safety Commission)

### Related Issues

- [Bedroom Fire Safety](#) (United States Fire Administration)  
Also available in: [Spanish](#)
- [Campus / College Fires](#) (National Fire Protection Association)
- [Candle Safety](#) (National Fire Protection Association)
- [Electrical Fires: Prevention and Extinguishing](#) (National Institute for Occupational Safety and Health)
- [Fire Extinguisher Selection, Location and Use](#) (National Institute for Occupational Safety and Health)
- [Fire Safety for People with Disabilities and Their Caregivers](#) (United States Fire Administration)  
Also available in: [Spanish](#)
- [Gas and Fuel Safety](#) (National Fire Protection Association)
- [Heating Fire Safety](#) (United States Fire Administration)
- [Home Fire Escape Planning and Practice](#) (National Fire Protection Association)

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## U.S. Environmental Protection Agency

# Healthy School Environments

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## Healthy School Environments

*Your One-Stop Location for Information and Links to School Environmental Health Issues*



### About Healthy School Environments

The Healthy School Environments Web pages are intended to serve as a gateway to on-line resources to help facility managers, school administrators, architects, design engineers, school nurses, parents, teachers and staff address environmental health issues in schools.

### [Energy Efficiency](#)

[Ventilation](#)

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### [Facility Operations and Maintenance](#)

[Indoor Air Quality](#), [Mold & Moisture](#), [Pest Management](#), [Ventilation](#), [Recycling](#), [High Performance Schools](#), [Renovation](#), [Cleaning](#)

### [Indoor Environmental Quality](#)

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### [Legislation and Regulation](#)

## EXPRESSLINKS

### EPA Programs for Schools

[Energy Star for Schools](#)

[Environmental Education](#)

[Indoor Air Quality Tools for Schools](#)

[Integrated Pest Management in Schools](#)

[Lead in Drinking Water in Schools and Day Care Centers](#)

[SunWise School Program](#)

### Related EPA Programs

[EPA Office of Children's Health Protection](#)

### Resources Outside of EPA

[National Clearinghouse for Educational Facilities](#)

[EXIT disclaimer](#)

[Whole Building Design Guide](#)

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- ▶ Human Genome Resources
- ▶ Biomedical Research & Informatics
- ▶ Environmental Health & Toxicology
- ▶ Health Services Research & Public Health

- ▶ About the National Library of Medicine
- ▶ Grants & Funding
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### Especially for:

- The Public
- Health Care Professionals
- Researchers
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- Publishers

### Current Health News

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(04/08/05)

[Kneepads, Often Optional, Can Curb Sports Injuries](#)  
(04/08/05)

[Vaccine Promising Against Disease-Causing HPV](#)  
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Health News from the past 30 days

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Find doctors, dentists and hospitals

## ▶ Other Resources

Local libraries, health organizations, international sites and more

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- ▶ [Good Bacteria Help with Eczema in Infants](#)
- ▶ [Once-a-Month Injectable Medication Helps Treat Alcohol Dependence](#)
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Studies for new  
drugs and treatments



## NIH SeniorHealth

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- [Blood/Lymphatic System](#)
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- [Immune System/AIDS](#)
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- [Mental Health and Behavior](#)
- [Metabolic Problems](#)
- [Mouth and Teeth](#)
- [Poisoning, Toxicology, Environmental Health](#)
- [Pregnancy and Reproduction](#)
- [Skin, Hair and Nails](#)
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- [Diagnostic Tests](#)
- [Drug Therapy](#)
- [Surgery and Rehabilitation](#)
- [Symptoms](#)
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- [Child and Teen Health](#)
- [Men's Health](#)
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### Easy-to-Read

Health information in plain language



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- [Depression](#)
- [Diabetes](#)
- [Fibromyalgia](#)
- [Gastroesophageal Reflux/Hiatal Hernia](#)
- [High Blood Pressure](#)



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- [Air Pollution](#)
- [Anthrax](#)
- [Arsenic](#)
- [Asbestos](#)
- Asbestosis see [Asbestos](#)
  
- [Biodefense and Bioterrorism](#)
- Biological Weapons see [Biodefense and Bioterrorism](#)
- Bioterrorism see [Biodefense and Bioterrorism](#)
- Campylobacter see [Food Contamination and Poisoning](#)
- [Carbon Monoxide Poisoning](#)
  
- Cell Phones see [Electromagnetic Fields](#)
- [Chemical Weapons](#)
- Cleaning Products see [Household Products](#)
- [Drinking Water](#)
- EMF see [Electromagnetic Fields](#)
  
- [Electromagnetic Fields](#)
- [Environmental Health](#)
- Environmental Tobacco Smoke see [Secondhand Smoke](#)
- [Food Contamination and Poisoning](#)
- Food Poisoning see [Food Contamination and Poisoning](#)
  
- [Food Safety](#)
- Fungicides see [Pesticides](#)
- Germ Warfare see [Biodefense and Bioterrorism](#)
- Hazardous Waste see [Environmental Health](#)
- Herbicides see [Pesticides](#)
  
- [Household Products](#)
- [Indoor Air Pollution](#)
- Insecticides see [Pesticides](#)
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[Environmental Health](#)

### Overviews

- [Tox Town](#) (National Library of Medicine) - Requires Flash Player
- [What is a Pesticide?](#) (Environmental Protection Agency, Office of Pesticide Programs)

### Prevention/Screening

- [Handle with Care!](#) (Environmental Protection Agency)
- [Read the Label First! Protect Your Household](#) (Environmental Protection Agency) - Links to PDF
- [Read the Label First! Protect Your Pet](#) (Environmental Protection Agency) - Links to PDF

### Related Issues

- [Antimicrobial Pesticide Products](#) (Environmental Protection Agency, Office of Pesticide Programs)
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- [Biopesticide Active Ingredients](#) (Environmental Protection Agency, Office of Pesticide Programs)
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- [Consumer Products Treated with Pesticides](#) (Environmental Protection Agency, Office of Pesticide Programs)
- [Counterfeit Pesticide Products for Dogs and Cats](#) (Environmental Protection Agency)
- [How to Use Insect Repellents Safely](#) (Environmental Protection Agency, Office of Pesticide Programs)
- [Illegal Pesticide Products](#) (Environmental Protection Agency, Office of Pesticide Programs)
- [In Case of Pesticide Poisoning](#) (Environmental Protection Agency, Office of Pesticide Programs)  
Also available in: [Spanish](#)
- [Pesticide Active Ingredients](#) (National Pesticide Information Center)

### Go Local

Health services in:

[Missouri](#)

[North Carolina](#)

[Other states coming - learn more](#)



The primary NIH organization for research on *Pesticides* is the [National Institute of Environmental Health Sciences](#)



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Health News from the past 30 days

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- ▶ [Good Bacteria Help with Eczema in Infants](#)
- ▶ [Once-a-Month Injectable Medication Helps Treat Alcohol Dependence](#)
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## Featured Site



April is National Donate Life Month. Learn more about [organ donation](#).

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Studies for new  
drugs and treatments



## NIH SeniorHealth

Health information  
for older adults



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## Heart Attack

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Introduction

Symptoms

Heart Anatomy

Causes

Angina-Heart Attack

Treatment

Emergency Plan

Cardiac Arrest

Prevention

This patient education program will help you understand the signs and causes of heart attacks, in case you or your loved one is at risk. It will also help you prepare for such an emergency. Tips for preventing heart attacks will also be presented.



Slide 3 of 84

Quit

Comments



Repeat  
Page



Other health topics: [A](#) [B](#) [C](#) [D](#)

## Radiation Exposure

Other health topics: [A](#) [B](#) [C](#) [D](#)

## First Aid



Other health topics: [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [XYZ](#) [List of All Topics](#)

## Chemical Weapons



### Contents of this page:

- [From the NIH](#)
- [Overviews](#)
- [Treatment](#)
- [Prevention/Screening](#)
- [Pictures/Diagrams](#)

- [Specific Conditions](#)
- [Related Issues](#)

- [Dictionaries/Glossaries](#)
- [Directories](#)
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- [Children](#)
- [Women](#)

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- [Injuries From](#)
- [From Pollution](#)

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- [Prevention/Screening](#)
- [Health Check Tools](#)

[Related Issues](#)

[Clinical Trials](#)

[Directories](#)  
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You may also be interested in these MedlinePlus pages:

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- [Burns](#)
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- [CPR](#)

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- [Prevention/Screening](#)

[Related Issues](#)

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[Children](#)

Search MEDLINE/PubMed for recent research articles on Chemical Weapons:

- [Chemical warfare](#)
- [Ricin](#)

You may also be interested in these MedlinePlus related pages:

- [Biodefense and Bioterrorism](#)
- [Disasters and Emergency Preparedness](#)
- [Poisoning, Toxicology, Environmental Health](#)

## Overviews

- [Biological, Chemical Weapons: Arm Yourself with Information](#) (Mayo Foundation for Medical Education and Research)
- [Chemical Agents](#) (Centers for Disease Control and Prevention)  
Also available in: [Spanish](#)
- [Ready.Gov](#) (Dept. of Homeland Security)  
Also available in: [Spanish](#)

## Treatment

- [FDA Clears Skin Lotion for Military to Protect against Chemical Burns](#) (Food and Drug Administration)
- [Strategic National Stockpile](#) (Centers for Disease Control and Prevention)

## Prevention/Screening

- [Are You Ready? A Guide to Citizen Preparedness](#) (Federal Emergency Management Agency) - Links to PDF  
Also available in: [Spanish](#)
- [Chemical Agents: Sheltering in Place](#) (Centers for Disease Control and Prevention)  
Also available in: [Spanish](#)
- [Cleaning and Disposal of Contaminated Clothing](#) (Centers for Disease Control and Prevention)  
Also available in: [Spanish](#)
- [Evacuation](#) (Centers for Disease Control and Prevention)  
Also available in: [Spanish](#)

## Related Issues

### Go Local

Health services in:  
[Missouri](#)  
[North Carolina](#)  
  
[Other states coming - more](#)



## Biodefense and Bioterrorism -- Web Sites with Statewide Services

### Related Topics

- [Environmental Health](#)

### Page Contents

- [Health Education](#)
- [Health Statistics \(NC\)](#)
- [Organizations/Associations](#)
- [Public Health Services](#)
- [Research Centers](#)

### Change Search

- [Choose location](#)

### Health Education

[Bioterrorism and Community Preparedness Response Resources](#) (UNC at Chapel Hill)  
<http://www.sph.unc.edu/bioterrorism>  
 (919) 966-7676

[Disaster Information Center](#) (NC Cooperative Extension Service)  
 Go to <http://www.ces.ncsu.edu/disaster/phnum.shtml> for phone contact with your county extension office.  
<http://www.ces.ncsu.edu/disaster>

[NC Center for Public Health Preparedness](#) (UNC at Chapel Hill)  
<http://www.sph.unc.edu/nccphp>  
 (919) 843-5561

[NC Division of Public Health](#) (NC Department of Health and Human Services)  
<http://www.ncpublichealth.com>  
 (919) 733-7081

[Statewide Program for Infection Control and Epidemiology](#) (UNC at Chapel Hill)  
<http://www.unc.edu/depts/spice>  
 (919) 966-3242

### Health Statistics (NC)

[NC Center for Public Health Preparedness](#) (UNC at Chapel Hill)  
<http://www.sph.unc.edu/nccphp>  
 (919) 843-5561

### Organizations/Associations

[Bioterrorism Preparedness and Anthrax](#) (NC Department of Health and Human Services)

### Health Information

From  
 MedlinePlus:

- [Biodefense and Bioterrorism](#)
- [Anthrax](#)
- [Botulism](#)
- [Chemical Weapons](#)
- [Disasters and Emergency Preparedness](#)
- [Hemorrhagic Fevers](#)
- [Immunization](#)
- [Infectious Diseases](#)
- [Plaque](#)
- [Smallpox](#)
- [All Poisoning, Toxicology, Environmental Health Topics](#)

# Household Products Database

SIS | NLM | Help

## Household Products Database

Home

Products

Ingredients

MSDS

  
**Quick Search**

### Browse & Search

- [Products](#)
- [Ingredients](#)
- [MSDS](#)

### Support Pages

- [About](#)
- [Help](#)
- [Glossary](#)
- [Contact Us](#)
- [Disclaimer](#)
  
- [Other Resources](#)

### Health & Safety Information on Household Products

What's under your kitchen sink, in your garage, in your bathroom, and on the shelves in your laundry room? Do these household products pose a potential health risk to you and your family?

Find out what's in these products and what are the potential health effects, and other safety and handling information.

[Continue...](#)



# Household Products Database

National Institutes of Health  
National Library of Medicine  
Specialized Information Services



Home

Products

Ingredients

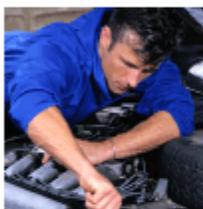
MSDS

Browse by  
Categories

Browse  
Alphabetically

Search

## Choose a Product Category



### Auto Products

Brake Fluid, De-icer,  
Lubricant, Sealant, and  
more...



### Inside the Home

Air Freshener, Bleach,  
Toilet Bowl Cleaner,  
and more...

### Pesticides

Animal Repellant, Fungicide,  
Herbicide, Insecticide,  
and more...



### Landscape / Yard

Fertilizer, Lawn Care,  
Swimming Pool Products,  
and more...



### Personal Care / Use

Antiperspirant, Hair Spray,  
Makeup, Shampoo, Soap,  
and more...



### Home Maintenance

Caulk, Grout, Insulation,  
Paint, Putty, Stain,  
and more...

### Arts & Crafts

Adhesive, Glaze, Glue,  
Primer, Varnish,  
and more...



### Pet Care

Flea & Tick Control, Litter,  
Stain/Odor Remover,  
and more...



# Household Products Database



Home

Products

Ingredients

MSDS

Browse by  
Categories

Browse  
Alphabetically

Search

## Browse the Pesticides Category

▶ [Product Category](#) ▶ [Pesticides](#)

Category	Type	Brand Name
<a href="#">Animal Repellent</a>	<a href="#">ants</a>	<a href="#">Hot Shot Maxattrax Roach Bait</a>
<a href="#">Fungicide</a>	<a href="#">ants &amp; roaches</a>	<a href="#">Raid Fumigator</a>
<a href="#">Herbicide</a>	<a href="#">aphids</a>	<a href="#">Safer Home Patrol Insect Killer</a>
<a href="#">Insect Repellent</a>	<a href="#">beetles</a>	<a href="#">TAT Roach Killer</a>
<a href="#">Insecticide</a>	<a href="#">berries</a>	<a href="#">TAT Roach Killer-10/25/2000</a>
<a href="#">Molluscicide</a>	<a href="#">bulbs</a>	<a href="#">Victor Roach Killing Powder</a>
<a href="#">Rodenticide</a>	<a href="#">caterpillars</a>	
	<a href="#">fertilizer w/insecticide</a>	
	<a href="#">fire ants</a>	
	<a href="#">fleas</a>	
	<a href="#">fleas/ticks</a>	
	<a href="#">flowers</a>	
	<a href="#">flying insects</a>	
	<a href="#">fruits</a>	
	<a href="#">grubs/worms</a>	
	<a href="#">home garden</a>	
	<a href="#">hornets/wasps</a>	
	<a href="#">houseplants</a>	
	<a href="#">indoor pests</a>	
	<a href="#">indoor/outdoor pests</a>	
	<a href="#">lawn/turf</a>	
	<a href="#">lice</a>	
	<a href="#">lure</a>	
	<a href="#">mites</a>	
	<a href="#">mites/ticks</a>	
	<a href="#">multipurpose</a>	
	<a href="#">ornamentals</a>	
	<a href="#">outdoor pests</a>	
	<a href="#">roaches</a>	
	<a href="#">roses</a>	
	<a href="#">sow bugs</a>	
	<a href="#">termites, carpenter</a>	



## Chemical Information

Chemical Name: **Permethrin**

CAS Registry Number: 05013

Synonyms: Permethrin  
Dichlorodiphenyl dimethylphosphine trioxide  
PhHazardous  
Substances  
Data Bank

HSDB

Download

Details

Other Files

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TOXNET  
Home

Item 1 of 1

Information from other National Health Studies: [Human Toxicology](#)Health Studies: [Human Toxicology](#)Toxicity Information: [See](#)Chemical Information: [See](#)Biomedical References: [See](#)

## Contents

Contract all categories

Expand all categories

Select

Clear

- [FULL RECORD](#)
- [Human Health Effects](#)
- [Emergency Medical Treatment](#)
- [Animal Toxicity Studies](#)
- [Metabolism/Pharmacokinetics](#)
- [Pharmacology](#)
- [Environmental Fate & Exposure](#)
- [Environmental Standards & Regulations](#)
- [Chemical/Physical Properties](#)
- [Chemical Safety & Handling](#)
- [Manufacturing/Use Information](#)
- [Laboratory Methods](#)
- [Special References](#)
- [Synonyms and Identifiers](#)
- [Administrative Information](#)

U.S. National Library of Medicine,  
8600 Rockville Pike, Bethesda, MD 20894,  
National Institutes of Health,  
Department of Health & Human Services

[Mackison, F. W., R. S. Stricoff, and L. J. Partridge, Jr. (eds.). NIOSH/OSHA - Occupational Health Guidelines for Chemical Hazards. DHHS (NIOSH) Publication No. 81-123 (3 VOLS). Washington, DC: U.S. Government Printing Office, Jan. 1981., p. 1]\*\*PEER REVIEWED\*\*

**Fire Fighting Procedures:**

Use carbon dioxide, foam, or dry chemical /on fires involving pyrethroids/. /Pyrethrum/ [Mackison, F. W., R. S. Stricoff, and L. J. Partridge, Jr. (eds.). NIOSH/OSHA - Occupational Health Guidelines for Chemical Hazards. DHHS (NIOSH) Publication No. 81-123 (3 VOLS). Washington, DC: U.S. Government Printing Office, Jan. 1981., p. 2]\*\*PEER REVIEWED\*\*

Fire-fighting: Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive-pressure mode. /Pyrethrum/

[Mackison, F. W., R. S. Stricoff, and L. J. Partridge, Jr. (eds.). NIOSH/OSHA - Occupational Health Guidelines for Chemical Hazards. DHHS (NIOSH) Publication No. 81-123 (3 VOLS). Washington, DC: U.S. Government Printing Office, Jan. 1981., p. 5]\*\*PEER REVIEWED\*\*

**Hazardous Decomposition:**

When heated to decomp it emits toxic fumes of /hydrogen chloride/.

[Lewis, R.J. Sax's Dangerous Properties of Industrial Materials. 9th ed. Volumes 1-3. New York, NY: Van Nostrand Reinhold, 1996., p. 122]\*\*PEER REVIEWED\*\*

**Protective Equipment & Clothing:**

Employees should be provided with and required to use dust- and splash-proof safety

## Products that contain this chemical

## Brand

[Schultz Houseplants and Garden](#)[Whitefly and Mealy Bug](#)[Ortho Ant, Flea, & Tick Killer Re](#)[Spectracide Carpenter Ant & Ter](#)[Spray Concentrate](#)[SprayPAK Flying & Crawling Inse](#)[Spectracide Pro Residual Insect](#)[Spray](#)[Champion Sprayon Multi Purpos](#)[Killer](#)[Bonide Ant, Flea & Tick Killer G](#)[Bonide Eight Garden and Home](#)[Ortho Ant Killer](#)[Bonide Yard & Patio Fogger](#)[Spectracide Immunox Plus Multi](#)[Disease Control](#)[Bonide Eight Insect Control Yar](#)[to Spray](#)



Search  as

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### Browse Haz-Map

- **[Hazardous Agents](#)**
  1. [By Types of Agents](#)
  2. [By Adverse Effects](#)
  3. [Alphabetically](#)
  
- **[Occupational Diseases](#)**
  1. [By Types of Diseases](#)
  2. [By Jobs and Symptoms](#)
  3. [Alphabetically](#)
  
- **[High Risk Jobs](#)**
  1. [By Types of Jobs](#)
  2. [Alphabetically](#)



**[Haz-Map: Information on Hazardous Chemicals and Occupational Diseases](#)**  
by  
**[Jay A. Brown, M.D., M.P.H.](#)**

[Haz-Map Fact Sheet](#) | [Download Haz-Map Brochure](#)

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Search  as  Agent  Disease  Job  Text Search

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**Browse Haz-Map : Jobs** [Search TOXNET](#)

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#) [List All](#)

- [Fallers](#)
- [Family and General Practitioners](#)
- [Farmers & Ranchers](#)
- [Farming, Fishing and Forestry Workers, All Others](#)
- [Farmworkers and Laborers, Crop, Nursery, and Greenhouse](#)
- [Farmworkers, Farm & Ranch Animals](#)
- [Fence Erectors](#)
- [Fiberglass Laminators & Fabricators](#)
- [Fine Artists, Including Painters, Sculptors & Illustrators](#)
- [Fire Fighters](#)
- [Fish and Game Wardens](#)
- [Fishers & Related Fishing Workers](#)
- [Floor Layers, Except Carpet, Wood, & Hard Tiles](#)
- [Floor Sanders & Finishers](#)
- [Floral Designers](#)
- [Food & Tobacco Roasting, Baking & Drying Machine Operators](#)
- [Food Batchmakers](#)
- [Food Cooking Machine Operators and Tenders](#)

## Browse Haz-Map

Search TOXNET

Haz-

## Browse

Job Name

Description

Category

SOC Code

Synonyms

Job Tasks

<b>Disease/Syndrome</b>	Asphyxiation, chemical
<b>Category</b>	Acute Poison
<b>Acute/Chronic</b>	Acute-Severe
<b>Synonyms</b>	Toxic asphyxiation
<b>Biomedical References</b>	<a href="#">Search PubMed</a>
<b>Comments</b>	Chemical asphyxiants include hydrogen cyanide (HCN), hydrogen sulfide (H <sub>2</sub> S), and carbon monoxide (CO). HCN and H <sub>2</sub> S combine with enzymes to disrupt respiration at the cellular level, while CO binds with hemoglobin to block the delivery of oxygen to the cells.
<b>Latency/Incubation</b>	None
<b>Diagnostic</b>	History; signs of brain hypoxia; carboxyhemoglobin level;
<b>ICD-9 Code</b>	986.7

## Related Information in Haz-Map

<b>Symptoms/Findings</b>	<p>Symptoms/Findings associated with this disease:</p> <ul style="list-style-type: none"> <li>• <a href="#">convulsion</a></li> <li>• <a href="#">dizziness</a></li> <li>• <a href="#">dyspnea, acute</a></li> <li>• <a href="#">headache</a></li> <li>• <a href="#">nausea, vomiting</a></li> <li>• <a href="#">stupor and coma</a></li> </ul>
<b>Job Tasks</b>	<p>High risk job tasks associated with this disease:</p> <ul style="list-style-type: none"> <li>• <a href="#">Enter manure pit</a></li> <li>• <a href="#">Enter silo one to ten days after filling with silage</a></li> <li>• <a href="#">Operate internal combustion engine with inadequate ventilation</a></li> <li>• <a href="#">Use sodium cyanide to recover silver from x-ray film</a></li> <li>• <a href="#">Work in confined space</a></li> <li>• <a href="#">Work with toxic chemicals that could be spilled or released</a></li> </ul>



Haz-Map Search More Searches Haz-Map Help Glossary References

Browse Haz-Map : find diseases by jobs & symptoms

Definition

Find disease associated

Select a

Find

Indicate

General

- anorexia
- dizziness
- fatigue
- fever
- myalgia
- syncope
- weight loss

Neurological

- confusion
- convulsions
- delirium
- demented
- drooping face



Haz-Map Search More Searches Haz-Map Help Glossary References

Browse Haz-Map

Search TOXNET

<b>Disease/Syndrome</b>	Hydrofluoric acid, toxic effect
<b>Category</b>	Acute Poison
<b>Acute/Chronic</b>	Acute-Severe
<b>Biomedical References</b>	<a href="#">Search PubMed</a>
<b>Comments</b>	Contact with concentrated solutions above 50-70 % cause immediate severe pain. Contact with less concentrated solutions may produce delayed pain and tissue destruction. Burns heal slowly because the fluoride ions penetrate tissues and may cause damage to the underlying bone. This acid is also an inhalation hazard. The IDLH level set by NIOSH is 30 ppm. Chronic skin or respiratory exposure to HF can lead to hypocalcemia and destruction of bone. [LaDou, p. 273-274 & 441-442]
<b>Latency/Incubation</b>	None
<b>Diagnostic</b>	History and presence of burn
<b>ICD-9 Code</b>	987.8
<b>Reference Link</b>	<a href="#">UC Berkeley - Hydrofluoric Acid Burns</a>
<b>Related Information in Haz-Map</b>	
<b>Symptoms/Findings</b>	Symptoms/Findings associated with this disease: <ul style="list-style-type: none"> <li>• <a href="#">burn, caustic or corrosive chemical</a></li> <li>• <a href="#">limb pain</a></li> </ul>
<b>Job Tasks</b>	High risk job tasks associated with this disease:

Haz-Map  
Browse

Search results

- [Fur](#)
- [Hy](#)



## Toxicology and Environmental Health

### TOXNET

Databases in toxicology and environmental health.

<a href="#">TOXLINE</a>	<a href="#">HSDB</a>	<a href="#">ChemIDplus</a>
<a href="#">DART</a>	<a href="#">TRI</a>	<a href="#">IRIS</a>
<a href="#">GENE-TOX</a>	<a href="#">CCRIS</a>	<a href="#">ITER</a>

### TOXMAP NEW

Geographic representation of Toxics Release Inventory (TRI) data.

### WISER - Wireless Information System for Emergency Responders NEW

PDA application to assist first responders during hazardous materials incidents.

### Haz-Map

Database on hazardous chemicals and occupational diseases.

### ALTBIB

References about alternatives to the use of live animals in biomedical research and testing.

### Internet Resources

Evaluated links to Internet resources on current issues including, [Indoor](#) and [Outdoor Air Pollution](#), [Chemical Warfare Agents](#), and [Toxicogenomics](#).

### Consumer Health

#### Tox Town

An interactive guide to commonly encountered toxic substances.

#### Household Products Database

Health & safety information on consumer household products.

#### MedlinePlus

[Poisoning, Toxicology and Environmental Health](#)

#### DIRLINE

Over 10,000 health organizations.

#### Health Hotlines

Toll-free numbers to 300 organizations.

### MEDLINE/PubMed

References from more than 4,600 biomedical journals, including the [Toxicology Subset](#)

### Other Resources

#### Chemical Information

#### Selected Toxicology Links

#### Education and Career Links

#### Reference Materials

- [Bibliographies, glossary, reports](#)
- [Review of PDA Applications in Toxicology and Environmental](#)



## Internet Resources in Toxicology & Environmental Health

[▶ Toxicology & Environmental Health](#) [▶ Internet Resources](#)

**Evaluated links to Internet resources on toxicology and environmental health issues of recent special interest, such as arsenic or chemical warfare agents.**

### **Arctic Health**

An information portal to issues affecting the health and well-being of our planet's northern-most inhabitants.

### **Arsenic and Human Health**

A chemical toxic to humans and found in some everyday places and things.

### **Asian American Health Web Site**

An information portal to issues affecting the health and well-being of Asian Americans in the United States.

### **Biological Warfare**

Biological pathogens can be intentionally deployed to cause disease or death.

### **Chemical Warfare Agents**

Chemical agents can be intentionally employed to cause toxic effects on humans, animals and plants.

### **Children's Environmental Health Information Resources**

Children exposed to environmental hazards often have greater exposure and health problems than adults.

### **Environmental Justice Internet Guide**

Affirms equal justice and protection under the law for all environmental statutes and regulations without discrimination based on race, ethnicity, and /or socioeconomic status.

### **Indoor Air Pollution** NEW

There are many sources of indoor air pollution in any home including cleaning and maintenance products, building materials, tobacco smoke, mold, and poor ventilation.

### **Outdoor Air Pollution** NEW

Many studies have shown links between pollution and health effects. The elderly and children are especially vulnerable to the effects of air pollution.

### **September 11th World Trade Center Lingerin Airborne Hazards**

Respiratory and other health consequences resulting from the September 11, 2001 World Trade Center disaster.

### **Toxicogenomics** NEW

A new scientific subdiscipline that combines the emerging technologies of genomics and bioinformatics to identify and characterize mechanisms of action of known and suspected hazardous substances..



## Chemical Warfare Agents

▶ Toxicology & Environmental Health ▶ Internet Resources ▶ Chemical Warfare Agents

- [Classes of Chemical Agents](#)
- [Government Information Resources](#)
- [Searches from the National Library of Medicine](#)
- [Books](#)
- [Web Sites of Related Interest](#)
- [Disclaimer](#)

### Classes of Chemical Agents

#### Nerve Agents

#### Health Effects

- Physostigmine cholinesterase inhibitors (reversible)
- Organophosphorus cholinesterase inhibitors (irreversible)
- Disable enzymes responsible for transmitting nerve impulses.
- Initial effects of organophosphorus agents occur within 1-10 minutes of exposure
- Death
  - Within 15 minutes for Tabun, Sarin, and Soman
  - From 4-42 hours for VX.

#### Agents Include

- [Tabun](#) (NATO military designation, GA)
- [Sarin](#) (NATO military designation, GB)
- [Soman](#) (NATO military designation, GD)
- [GF](#) (Cyclohexyl methylphosphonofluoridate)
- [VX](#) (Methylphosphonothioic acid S-(2-(bis(1-methylethyl)amino)ethyl) O-ethyl ester)
- [GE](#) (Phosphonofluoridic acid, ethyl-, isopropyl ester)
- [VE](#) (Phosphonothioic acid, ethyl-, S-(2-(diethylamino)ethyl) O-ethyl ester)
- [VG](#) (Amiton)
- [VM](#) (Phosphonothioic acid, methyl-, S-(2-(diethylamino)ethyl) O-ethyl ester)

#### Blister/Vesicant Agents

#### Health Effects

- Vesicants
  - Skin blisters
  - Damage eyes, mucous membranes, respiratory tract, and internal organs

## Government Information Resources

### Centers for Disease Control and Prevention

#### Agency for Toxic Substances and Disease Registry

- [ToxFAQs™ for Cyanide](#)
- [ToxFAQs™ for Mustard Gas](#)
- [Phosgene](#)
- [Blister Agents, Lewisite and Mustard](#)
- [Blister Agents, Nitrogen Mustard](#)
- [Blister Agents, Sulfur Mustard](#)
- [Phosgene Oxime](#)
- [Nerve Agents](#)
- [Frequently Asked Questions about Contaminants Found at Hazardous Waste Sites: Gas](#)
- [Frequently Asked Questions About Contaminants Found at Hazardous Waste Sites: Gas](#)

#### Emergency Preparedness and Response

- [Chemical Agents](#)
- [Ricin](#)
- [Sarin](#)
- [Sulfur Mustard \(Mustard Gas\)](#)

#### Morbidity and Mortality Weekly Report

- [Biological and Chemical Terrorism: Strategic Plan for Preparedness and Response Recommendations of the CDC Strategic Planning Workgroup](#)  
MMWR Recomm Rep. 2000 Apr 21;49(RR-4):1-14
- [Case Definitions for Chemical Poisoning](#)  
MMWR Recomm Rep. 2005 Jan 14;4(RR01):1-24
- [Recommendations for Protecting Human Health Against Potential Adverse Effects of Exposure to Low Doses of Chemical Warfare Agents.](#)  
MMWR Morb Mortal Wkly Rep. 1988 Feb 12;37(5):72-4, 79

#### National Center for Environmental Health

- [Demilitarization of Chemical Weapons](#)



## Toxicology and Environmental Health

### TOXNET

Databases in toxicology and environmental health.

<a href="#">TOXLINE</a>	<a href="#">HSDB</a>	<a href="#">ChemIDplus</a>
<a href="#">DART</a>	<a href="#">TRI</a>	<a href="#">IRIS</a>
<a href="#">GENE-TOX</a>	<a href="#">CCDIS</a>	<a href="#">ITER</a>

### TOXMAP NEW

Geographic representation of Toxics Release Inventory (TRI) data.

### WISER - Wireless Information System for Emergency Responders NEW

PDA application to assist first responders during hazardous materials incidents.

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#### Selected Toxicology Links

#### Education and Career Links

#### Reference Materials

- [Bibliographies, glossary, reports](#)
- [Review of PDA Applications in Toxicology and Environmental](#)



## TOXMAP - Environmental Health e-Maps

[Home](#)

[Facilities](#)

[Releases](#)

[Trends](#)

[FAQ](#)

[Welcome](#)

[News](#)

[Accessibility](#)

[Fact Sheet](#)

[About](#)

### Quick Search

Chemical

City

State

Zip

## Welcome to TOXMAP

Click to begin exploring ...



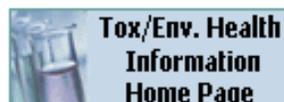
### Items of Interest

- [Take a TOXMAP tour](#)
- [TOXMAP to be presented at Towson University GIS Conference March 21-22](#)
- [What is TOXMAP?](#)
- [What data does TOXMAP access?](#)
- [How accurate is TRI Data?](#)
- [What are some tips for reading maps critically?](#)

### Questions

- [? Whom do I contact with questions and/or suggestions?](#)  
[more...](#)

## LEARN & DO MORE



**Tox/Env. Health  
Information  
Home Page**

[Create maps from TOXNET TRI](#)

[Search TOXNET](#)

[Search NLM](#)



TOXMAP - Environmental Health e-Maps

- Home
- Facilities
- Releases
- Trends
- FAQ

- All Facilities
- Show/Hide
- Download
- About

Chemical

**Reference Info**

These resources may be useful for specific chemical information.

- [HSDB](#)
- [ATSDR](#)

Map Area

**Toxicology Biblio. Info**

Search: places

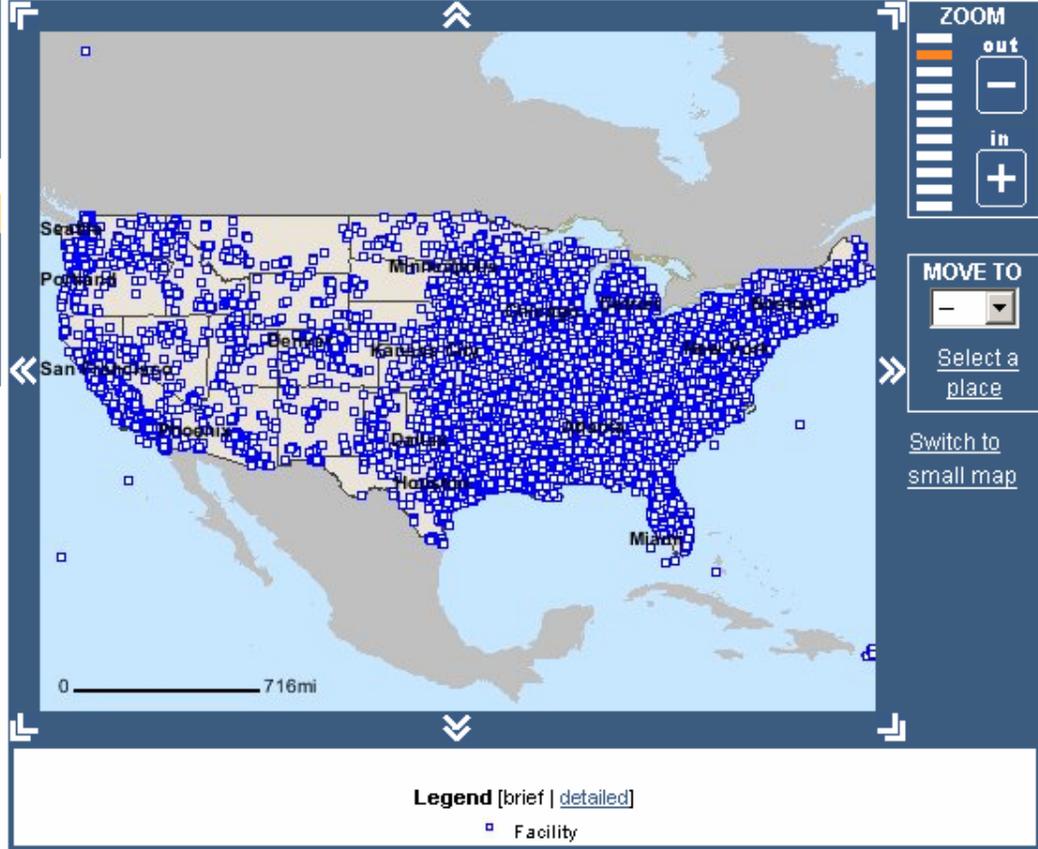
- TOXLINE Special
- TOXLINE Core on PubMed

- Questions**
- How accurate is TRI data?
  - How accurate are TRI locations in TOXMAP?
  - Whom do I contact with questions and/or suggestions? more...

All Reporting Facilities, All Chemicals

TRI-(1987-2002) - 48,205 facilities reporting nationwide

[Print this map](#)



[Identify facilities on this map](#)

**ZOOM**

out

in

**MOVE TO**

Select a place

[Switch to small map](#)

**Legend** [brief | [detailed](#)]

Facility

Map Options

- Show/hide map data (e.g. Census Demographics, cities, roads)
- Map single chemical releases or trends in this area

## All Reporting Facilities, All Chemicals

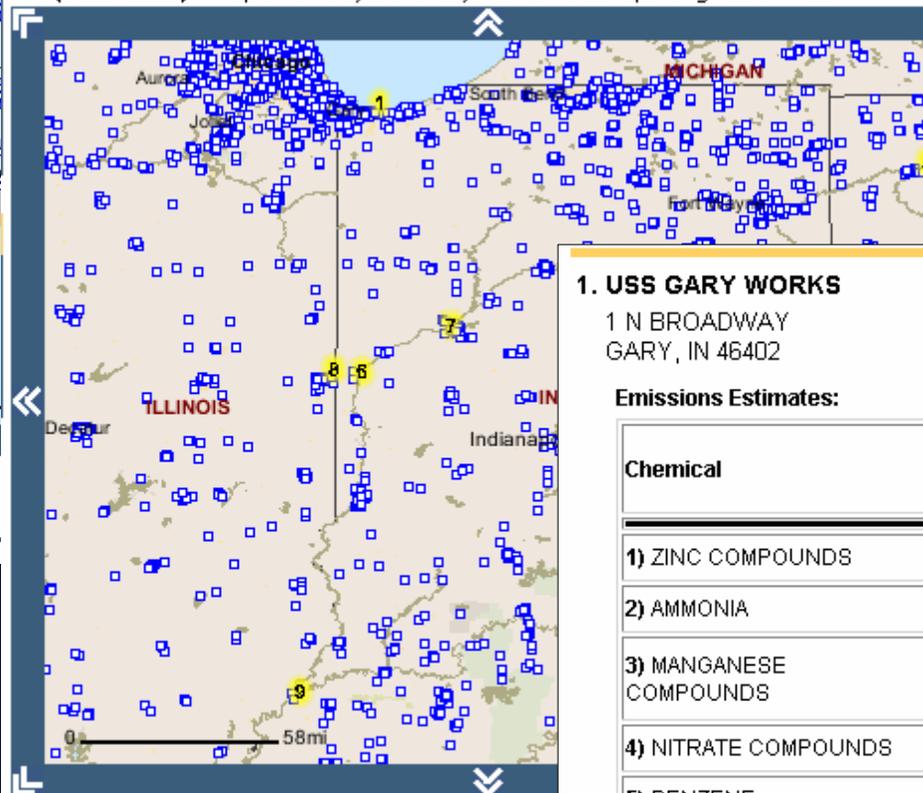
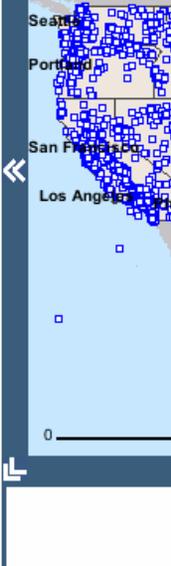
TRI (1987-2002) - 48,205 facilities reporting nationwide



## All Reporting Facilities, All Chemicals

TRI (1987-2002) - Map shows 4,484 of 48,205 facilities reporting nationwide

[Print this map](#)



**Apply to this map**

- [U.S. Census Data](#) [i](#)
- [Reference Data](#) [i](#)

**Facilities reporting to TRI** [i](#)

[Hide list](#)

### 1. USS GARY WORKS

EPA Facility Number: 46402SSGRYONENO [top](#)

1 N BROADWAY  
GARY, IN 46402

#### Emissions Estimates:

Chemical	Release Amount (lbs./all years)	%*	Distribution By Chemical**
1) ZINC COMPOUNDS	54,565,368	39.8%	
2) AMMONIA	23,637,214	17.2%	
3) MANGANESE COMPOUNDS	22,051,212	16.1%	
4) NITRATE COMPOUNDS	9,100,168	6.6%	
5) BENZENE	6,778,706	4.9%	
6) Other chemicals	20,998,432	15.3%	
<b>TOTAL</b>	<b>137,131,100</b>		

\* Percents may not add to 100 because of rounding.

\*\* Small values may not be visible on chart. Refer to Chemical Table at left

[All chemicals reported by this facility](#)



- Human Health Effects
- Manufacturing/Use Info
- Env. Fate / Exposure

- ToxFaqs & Public Health Statements
- Public Health Assessments
- General Documents

Search: chemical & places

- TOXLINE Special
- TOXLINE Core on PubMed

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Home Facilities

Search 2002 2001 2000

Chemical

BENZENE (71-43-2)

Reference Info

TRI-2002 - Map shows 62 of 865

HSDB

- Human Health Effects
- Manufacturing/Use Info
- Env. Fate / Exposure

ATSDR

- ToxFaqs & Public Health Statements
- Public Health Assessments
- General Documents

Chemical & Map Area

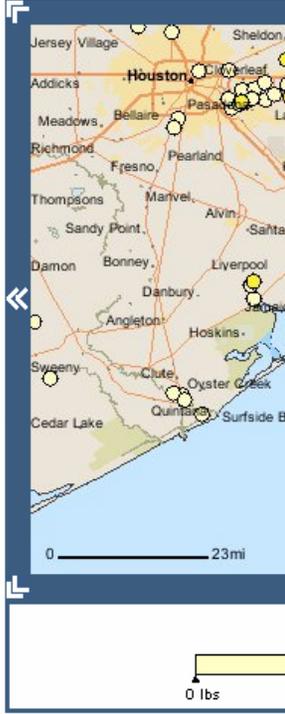
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Questions

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Map Options

Show/hide map data (e.g. C

Hazardous  
Substances  
Data Bank

HSDB

Download Basic Search Details Other Files Modify Search

Limits Browse Index Help

TOXNET Home

Item 1 of

- Evidence for Carcinogenicity
- Human Toxicity Excerpts
- Skin, Eye and Respiratory Irritants
- Drug Warnings
- Medical Surveillance
- Populations at Special Risk
- Probable Routes of Human Exposure
- Body Burden
- Average Daily Intake
- Minimum Fatal Dose Level
- Emergency Medical Treatment
- Animal Toxicity Studies
- Metabolism/Pharmacokinetics
- Pharmacology
- Environmental Fate & Exposure
- Environmental Standards & Regulations
- Chemical/Physical Properties
- Chemical Safety & Handling
- Occupational Exposure Standards
- Manufacturing/Use Information
- Laboratory Methods
- Special References
- Synonyms and Identifiers
- Administrative Information

BENZENE

CASRN: 71-43-2

For other data, click on the Table of Contents

Chemical Safety & Handling:

DOT Emergency Guidelines:

Fire or explosion: Highly flammable: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a "P" may polymerize explosively when heated or involved in a fire. Runoff from fire may create fire or explosion hazard. Containers may explode when heated. Liquids are lighter than water.

[U.S. Department of Transportation. 2000 Emergency Response Guidebook. RSPA P 5800.8 Edition. Washington, D.C: U.S. Government Printing Office, 2000, p. G-130]\*\*QC REVIEWED\*

Health: May cause toxic effects if inhaled or absorbed through skin. Inhalation or contact with material may irritate or burn skin and eyes. Fire will produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation. Runoff from fire control or dilution water may cause pollution.

[U.S. Department of Transportation. 2000 Emergency Response Guidebook. RSPA P 5800.8 Edition. Washington, D.C: U.S. Government Printing Office, 2000, p. G-130]\*\*QC REVIEWED\*





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Directory of Health Organizations Online



DIRLINE Search Results



DIRLINE

fire

Search Clear

◀ Item 9 of 67 ▶

**International Society of Fire Service Instructors (ISFSI)**

PO Box 2320  
Stafford, VA 22555

**Telephone:**

(800) 435-0005 (toll-free)  
(540) 657-2490  
(540) 657-0154 (Fax)

**Email:**

[info@isfsi.org](mailto:info@isfsi.org)

**Internet Address:**

<http://www.isfsi.org>

**Abstract:**

The International Society of **Fire** Service Instructors (ISFSI) is renowned for the training and educational programs provided for instructors and training personnel in the **fire** and emergency response community. ISFSI assists in developing the educational and training skills that are critical to the role in the **fire**, life safety, and emergency response community. ISFSI's mission is to preserve life and the environment from the threat of **fire** and other disasters.

**Type of Organization:**

Society

**National Network of Libraries of Medicine Region:**

2

**MESH Headings:**

[Accident Prevention](#)  
**\*Fires**  
[Massachusetts](#)  
**\*Safety**  
[Societies](#)

fire

Search Clear

**Search:**

all of the words  any

**Fields:** (if none checked, search all fields)

Organization name or address  
 MeSH Headings/Key words

**Select records containing:**

Only organizations with full text  
 Only organizations with abstracts

Search Browse the

Save Checked Items

Sort

Details

History

Download

Modify Search

New Search

Browse Index

SIS Home

MEDLINEplus Home

fire  
Items 1 through 20 of 67  
Organization Names are sorted

Select Record	Organization
1 <input type="checkbox"/>	<a href="#">Fire Research J National Institut (FRIS)</a>
2 <input type="checkbox"/>	<a href="#">South Carolina South Carolina</a>
3 <input type="checkbox"/>	<a href="#">International Fi (IFMA)</a>
4 <input type="checkbox"/>	<a href="#">International A</a>
5 <input type="checkbox"/>	<a href="#">Office of Fire P Government (O</a>
6 <input type="checkbox"/>	<a href="#">International A</a>
7 <input type="checkbox"/>	<a href="#">Maryland Fire a</a>
8 <input type="checkbox"/>	<a href="#">Society of Fire</a>
9 <input type="checkbox"/>	<a href="#">International S</a>
10 <input type="checkbox"/>	<a href="#">U.S. Fire Admin Department of I</a>
11 <input type="checkbox"/>	<a href="#">Center for High</a>
12 <input type="checkbox"/>	<a href="#">National Fire P</a>
13 <input type="checkbox"/>	<a href="#">Center for Fires</a>
14 <input type="checkbox"/>	<a href="#">New Mexico St Department (NM</a>
15 <input type="checkbox"/>	<a href="#">Chemistry Divis Navy</a>
16 <input type="checkbox"/>	<a href="#">Central Buildin</a>





# Health Hotlines Subject Index

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

- Keyword Search
- Subject Index
- Suggest An Organization
- About Health Hotlines
- Help With Searching
- Home



## Search Results

6 Records Found



## Full Record

Organization Name	<b>American Burn Association</b>
Organización	<i>Asociación Americana de Víctimas de Quemaduras</i>
Address	625 North Michigan Avenue, Suite 1530 Chicago, IL 60611
Phone Number	<b>(800) 548-2876</b>
Health Subjects	Accident Prevention; Burns; Fires
Other Languages	Spanish
Publications in Other Languages	Spanish
Web Address	<a href="http://www.ameriburn.org">www.ameriburn.org</a>

**Health Hotlines** is a service of the National Library of Medicine (NLM)  
[\[SIS\]](#) | [\[NLM\]](#) | [\[Hotlines Home\]](#) | [\[Technical Help\]](#)

# National Network of Libraries of Medicine

nnlm.gov



United States  
National Library of Medicine  
National



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- ▶ Online Exhib
- ▶ Projects

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- ▶ Health Servi
- ▶ Health

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- ▶ Medicine
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- ▶ Training & C
- ▶ Network of M

## On Exhibit



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Need help with health information? The **National Network of Libraries of Medicine (NN/LM)** can assist you. Contact us at 1-800-338-7657.

## Health Information

Concerned about your health or that of a friend or family member? Search NLM databases using MEDLINEplus or PubMed. Find a library, training materials, a class to take, or someone to teach a class for your organization.

## Librarian & Health Educator Resources

Classes and training materials. Provide health information to the public. Use DOCLINE and SERHOLD. Provide Loansome Doc service.

## Projects

Funding opportunities, subcontracts and awards, Outreach Evaluation, Partners in Information Access for Public Health Professionals, Tribal Connections.

## About Us

Mission statements, program objectives, general information, staff lists, employment opportunities.

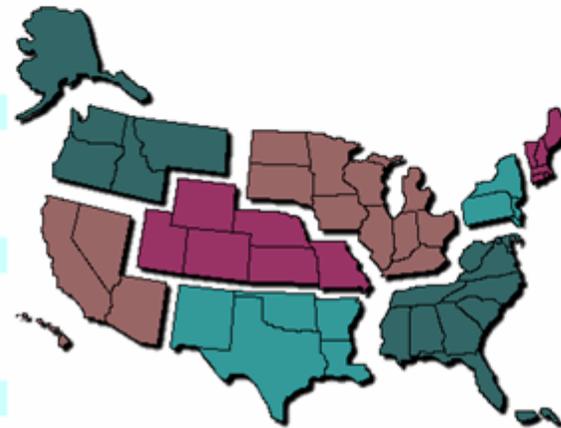
## Announcements

News items, upcoming exhibits, calendar items, opportunities.

## Search

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Select one of the regions in the map to visit that NN/LM regional office's Web site.



**NN/LM Home** : [Health Information](#) | [Librarian & Health Educator Resources](#) | [Projects](#) | [About Us](#) | [Announcements](#) | [Search](#)

[Policy on Linking](#) | [Disclaimer](#) | [Freedom of Information Act](#) | [NLM](#) | [NIH](#) | [HHS](#)

[NN/LM Web Developers](#) | Revised: August 17, 2002

<http://nnlm.gov/>



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# In conclusion

- There are over 1M firefighters in the U.S.
- Emergency responders are health providers
- Access to the internet and use of PDAs is growing
- ERs are not frequent medical library visitors
- Good health information is an integral part of their emergency “equipment”
- Outreach to their community is part of their mission (e.g., open houses, school talks, neighborhood meetings)
- Requires reaching out and going to your local firehouse

# Contact Information

**Marti Szczur**  
**[szczurm@mail.nlm.nih.gov](mailto:szczurm@mail.nlm.nih.gov)**