

Information for environmental health emergencies: what can WHO offer?

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(WHO/ILO/UNEP)



World Health
Organization

Outline

- Introduction to WHO work on environmental emergencies
- Case study
- Description of WHO products and how to access them



Background

- Environmental Health Emergency is a public health emergency arising from:
 - Chemical incident
 - Radionuclear incident
 - Natural disaster that may result in the release of chemicals or radionuclear materials
 - Event resulting in significant contamination of food chain or water supply
 - Complex emergency (e.g. war) that results in environmental contamination

Background

- WHO serves its Member States and has a mandate to assist them in the dealing with environmental emergencies:
 - WHO Constitution, Article 2: "In order to achieve its objectives, the function of the [World Health] Organization shall be to furnish appropriate technical assistance and, in emergencies, necessary aid upon the request of Governments"
 - WHA 55.16: Global public health response to natural occurrence, accidental release or deliberate use of biological and chemical agents or radionuclear material that affect health
 - International Health Regulations (2005): public health emergencies of international concern

Many departments in WHO are involved

Public Health & Environment

- International Programme on Chemical Safety (IPCS)
- Water, Sanitation & Health
- Radiation & Environmental Health

**Communicable
Disease
Surveillance &
Response**

Food Safety

**Health Action
in Crisis**

**WHO regional
& country
offices**

WHO collaborates with others

- WHO Participating Institutions & Collaborating Centres
- Intergovernmental Organization technical groups:
 - OECD Working Group on Chemical Accidents
 - IOMC Coordinating Group on Chemical Accident Prevention, Preparedness and Response
 - G7 + Mexico Global Health Security Initiative: Working Group on Chemical Terrorism
 - EC Health Security Committee: Working Group on Chemical Threats
- Organisation for the Prohibition of Chemical Weapons
- UNEP-Office for Coordination of Humanitarian Affairs / Joint Unit for Environmental Emergencies

Case study

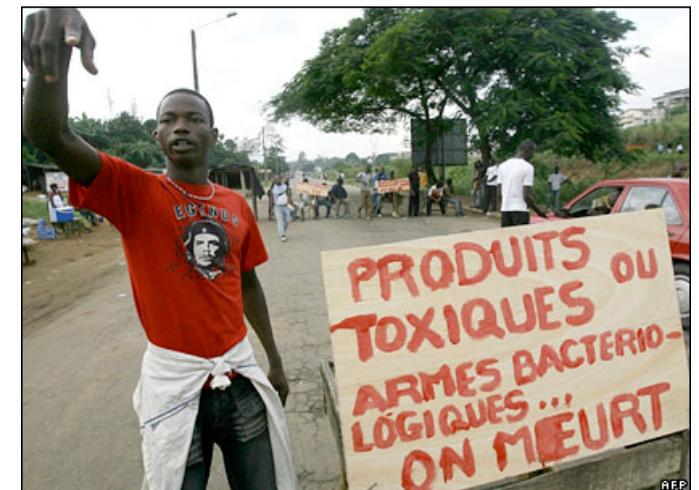
Toxic waste in Ivory Coast

- 19-20 August: ship unloaded chemical waste into trucks which then dumped the waste on 17 sites around Abidjan.
- Waste contained H_2S , mercaptans, methyl phenols, hydrocarbons, $NaOH$ and other chemicals



Toxic waste in Ivory Coast cont'd

- 2-3 days later people started seeking medical attention for respiratory tract irritation, nosebleeds, gastro-intestinal upset, headaches
- Health care facilities soon became overwhelmed
- By 1 month after dumping, over 60,000 people had attended hospitals & clinics
- There was mass unrest – some politicians were attacked



WHO response

- HQ and regional office staff sent to support WHO country office
- Information provided from IPCS resources to aid risk assessment and management:
 - ICSCs in French
 - CICADs
 - Poisons Information Monographs
 - Food additive and water quality guidelines
- Expert advice sought from other partners e.g. poisons centres, WHO Collaborating Centres

ICSC: NFR0165 International Chemical Safety Cards (WHO/PCSI/LO) / CDC/NIOSH

Fiches Internationales de Sécurité Chimique

SULFURE D'HYDROGENE ICSC: 0165



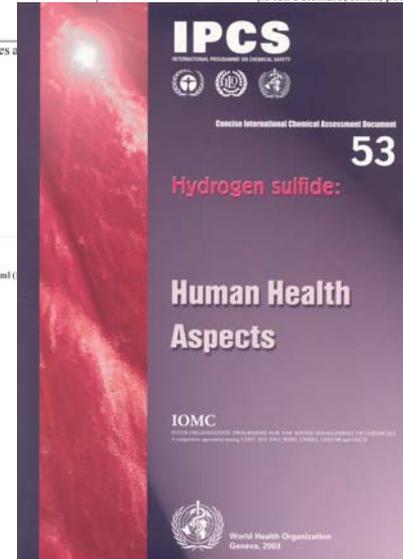
Hydrogène sulfuré
H₂S
Masse moléculaire: 34.1
(bonne)
(bonne)

N° ICSC : 0165
N° CAS : 7783-06-4
N° RTECS : [MX1225000](#)
N° ONU : 1053
N° CE : 016-001-00-4
04.10.2000 Revu en réunion



TYPES DE RISQUES/ EXPOSITIONS	RISQUES/ SYMPTOMES AIGUS	PREVENTION	PREMIER SECOURS/ AGENTS D'EXTINCTION
INCENDIE	Extrêmement inflammable.	PAS de flammes nues. PAS d'étincelles et interdiction de fumer.	Couper l'alimentation, en cas d'empêchement et sans danger à proximité, laisser le feu s'éteindre, sinon, pour
EXPLOSION	Les mélanges explosifs.		

<http://www.cdc.gov/niosh/ipcs/fr/nfr0165.html>



WHO Response cont'd

- Liaison with other agencies and teams
 - UN Disaster Assistance & Coordination (UNDAC)
 - French & Dutch assistance teams
 - US Centre for Disease Control
- Liaison with national bodies
 - Ministry of Health
 - Analytical laboratories
 - Local hospitals & clinics
- Assistance with resource mobilisation, particularly to replenish medical supplies

WHO products & how to access them

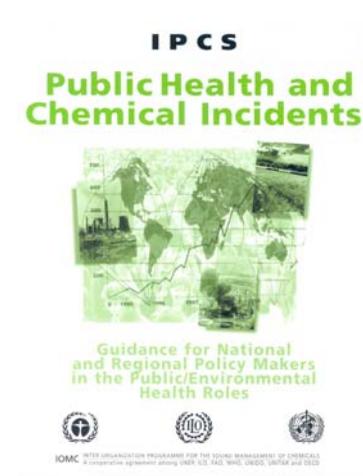
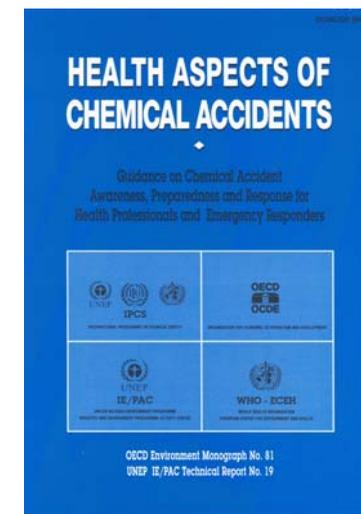
Resources provided by WHO

- Technical guidelines
- Chemical risk assessment information
- Information on management of poisoning
- Networks for assistance



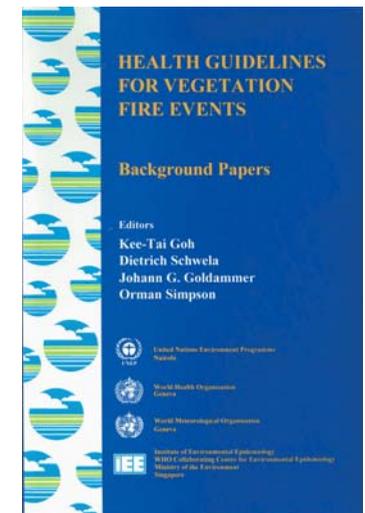
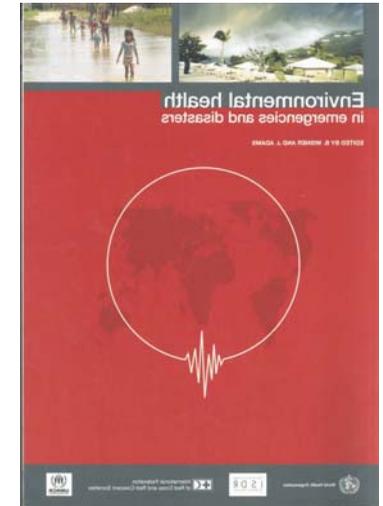
Technical Guidelines - general

- Health Aspects of Chemical Accidents: Guidance on chemical accident awareness, preparedness and response for health professional and emergency responders (IPCS, OECD, UNEP-IE/PAC, WHO-ECEH)
- IPCS Public Health and Chemical Incidents for National & Regional Policy Makers in the Public/Environmental Health Roles – under revision



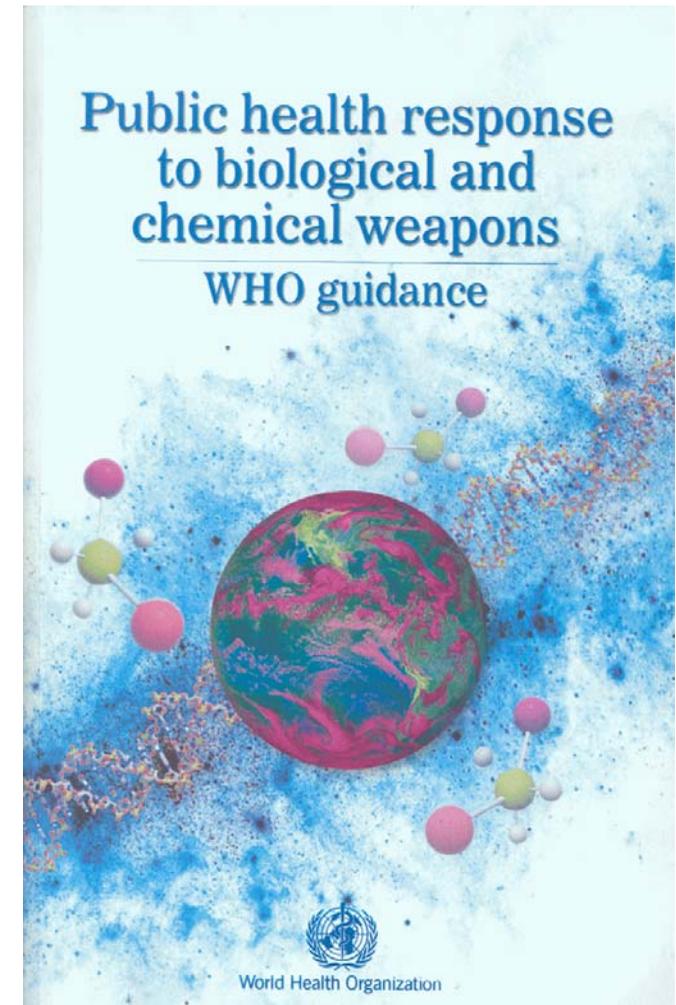
Technical Guidelines - general

- Environmental Health in Emergencies and Disasters
- WHO health assessment protocols for emergencies
- Radiation Emergency Guidelines
- Guidelines for safe disposal of unwanted pharmaceuticals in and after emergencies
- Health Guidelines for Vegetation Fire Events (WHO, WMO, UNEP, IIE)



WHO Guidance – deliberate use

- Public health response to biological and chemical weapons: WHO Guidance, 2nd ed
- Guidelines to assess national health preparedness and response programmes to the deliberate use of biological and chemical agents (draft)



International Chemical Safety Cards

- Essential health & safety information on chemicals
- Information on the intrinsic hazards, first aid, fire-fighting measures, precautions for spillage, disposal, storage, packaging, labelling and transport.
- Internationally peer-reviewed
- Available in >15 languages

ICSC: NITL0015 International Chemical Safety Cards (WHO/PCS/ILO) | CDC/NIOSH

Schede Internazionali di Sicurezza Chimica

BENZENE

ICSC: 0015



Cicloesatriene
Benzolo
 C_6H_6
Massa molecolare: 78.1

ICSC # 0015
CAS # 71-43-2
RTECS # [CY1400000](#)
NU # 1114
CE # 601-020-00-8

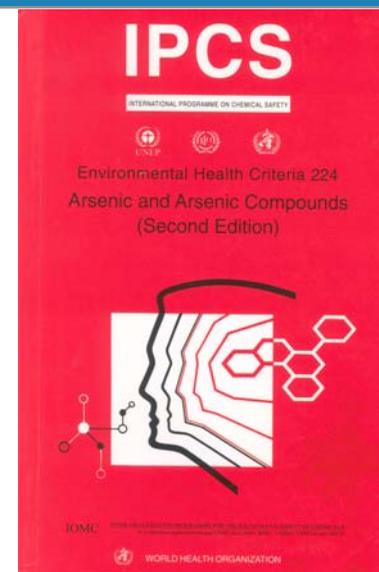


TIPO DI RISCHIO/ ESPOSIZIONE	RISCHI ACUTI/ SINTOMI	PREVENZIONE	PRIMO SOCCORSO/ MEZZI ESTINGUENTI
INCENDIO	Altamente infiammabile.	NO fiamme libere, NO scintille e NON fumare.	Polvere, AFFF, schiuma, anidride carbonica.
ESPLOSIONE	Miscela vapore/aria sono esplosive. Rischio di incendio ed esplosione: vedi Pericoli Chimici.	Sistemi chiusi, ventilazione, materiale elettrico e impianto di illuminazione antideflagranti. NON utilizzare aria compressa per riempire, versare o trattare. Utilizzare utensileria manuale anti innesco. Prevenire la formazione di cariche elettrostatiche (per es. con messa a terra).	In caso di incendio: mantenere freddi i fusti, ecc., bagnandoli con acqua.
ESPOSIZIONE		EVITARE OGNI CONTATTO!	

<http://www.cdc.gov/niosh/ipcs/nitl/nitl0015.html> (1 of 4)2006-10-05 12:47:49

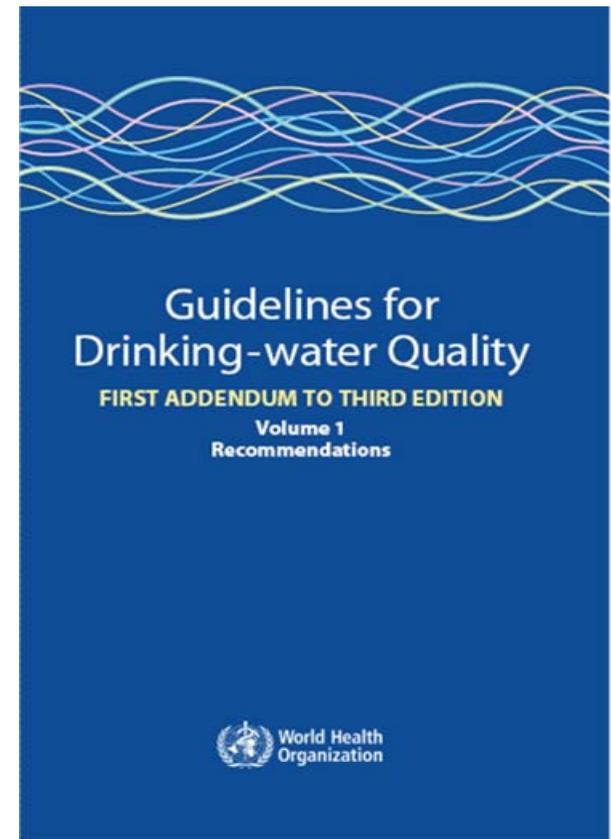
Chemical Assessment Documents

- Environmental Health Criteria (EHCs)
- Concise International Chemical Assessment Documents (CICADs)
- These are
 - Internationally accepted reviews on effects of chemical on human health & environment
 - Characterize hazard & dose-response of exposure to chemicals
 - Includes information about environmental levels & environmental fate



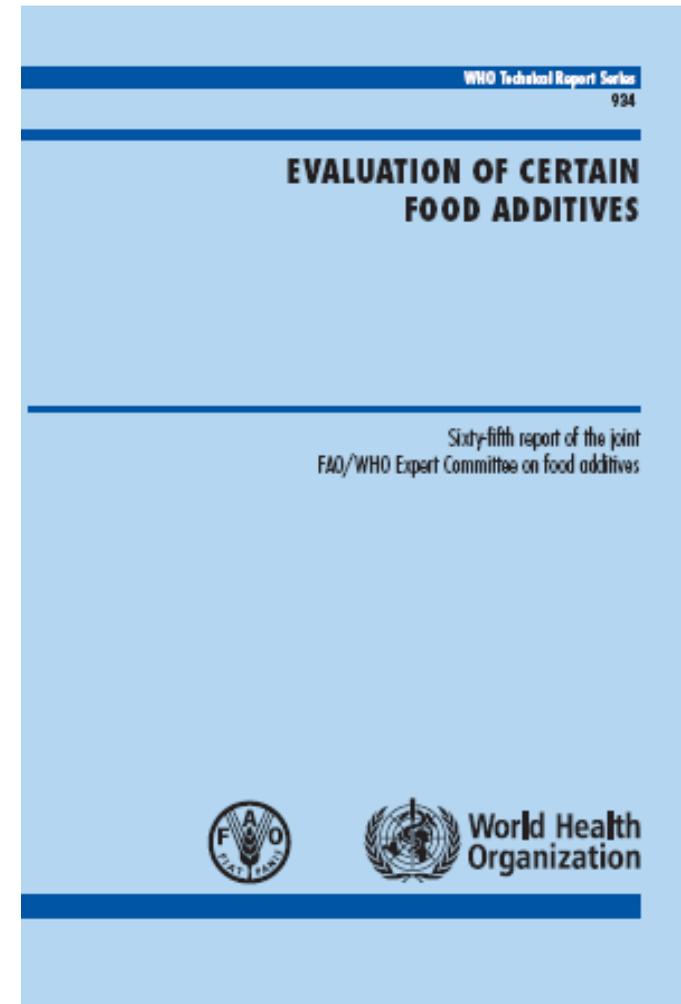
Guidelines for drinking water quality

- Establish guideline values for chemicals in water supply
- Backed up by monographs on each chemical listed
 - http://www.who.int/water_sanitation_health/dwq/chemicals/en/index.html
- Assists risk assessment after chemical contamination of water sources
 - e.g. Songhua River contamination with benzene



Food additives and residues

- FAO/WHO Joint Expert Committee on Food Additives
- FAO/WHO Joint Meeting on Pesticide Residues
 - Toxicology assessment
 - Reference doses for chemicals in food
 - Can be used for risk assessment after chemical contamination of food chain
 - e.g. theft of pesticide-treated rice from grain store



Poisons Information Monographs

- Internationally peer-reviewed information on diagnosis and management of poisoning
- Cover chemicals, pharmaceuticals, poisonous plants & poisonous & venomous animals
- Information:
 - symptoms & signs
 - routes of exposure
 - first aid
 - clinical management

Networks for assistance

- **WHO Collaborating Centres**
 - WHO CC for Studies on the Health Effects of Mercury Compounds, National Institute for Minamata Disease, Minamata City, Japan
 - WHO CC for the Public Health Management of Chemical Incidents, Chemical Hazard and Poisons Division, Health Protection Agency, London, UK
- **INTOX Network**
 - Poisons centres & clinical toxicologists
- **ChemiNet**
 - Toxicologists, occupational physicians, analytical toxicologists, environmental health experts

Radiation network

- Radiation Emergency Medical Preparedness and Assistance Network (REMPAN)
- Provides emergency medical support for radiation-exposed individuals
- International Atomic Energy Authority (IAEA) is prime coordinating agency for international response to radiation accidents.



How to access WHO products

INCHEM Databank

- Collections of information on chemicals from WHO, IARC and OECD
- Can search across whole collection
- Free to end-user on Internet (www.inchem.org)
- CD-ROM available

IPCS INCHEM

About Search CD-ROM Help

**Chemical Safety Information
from Intergovernmental Organizations**

IPCS INCHEM is a means of rapid access to internationally peer reviewed information on chemicals commonly used throughout the world, which may also occur as contaminants in the environment and food. It consolidates information from a number of intergovernmental organizations whose goal it is to assist in the sound management of chemicals.

Search

Concise International Chemical Assessment Documents (CICADs)

Environmental Health Criteria (EHC) Monographs

Health and Safety Guides (HSGs)

International Agency for Research on Cancer (IARC) - Summaries and Evaluations

International Chemical Safety Cards (ICSCs)

IPCS/CEC Evaluation of Antidotes Series

Joint Expert Committee on Food Additives (JECFA) - Monographs & Evaluations

Joint Meeting on Pesticide Residues (JMPR)

Pesticide Documents (PDs)

Poisons Information Monographs (PIMs)

Screening Information Data Set (SIDS) for High Production Volume Chemicals



The International Programme on Chemical Safety (IPCS)

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- Chemicals assessment
- Methods for chemicals assessment
- Chemicals in food
- Poisons information, prevention and management
- Chemical incidents and emergencies
- Capacity building

Publications | About IPCS | Events

[International Programme on Chemical Safety](#)

Chemical incidents and emergencies

The WHO PCS Chemical Alert and Response Team identifies, alerts, tracks and where appropriate coordinates a response to chemical incidents and emergencies on a global basis. The aim of this is to strengthen capacity in countries, particularly developing countries and those in economic transition, to deal with chemical incidents and emergencies. To achieve the aim it is necessary to engage in the following activities and liaisons with key partners.

- [Identifying and verifying chemical incidents and emergencies of international concern](#)
- [Coordinating the response to chemical incidents and emergencies of international concern](#)
- [Strengthening and working with a global network of partners](#)
- [Participating in the revision of the International Health Regulations \(IHR\)](#)
- [Providing guidance for strengthening preparedness, planning, response and follow-up to chemical accidents and emergencies](#)
- [Key definitions](#)

YELLOWTOX



[World directory of poisons centres](#)

EMERGENCIES

Ivory Coast
[Dumping of toxic waste](#)

Lebanon crisis
[Chemical incidents](#)

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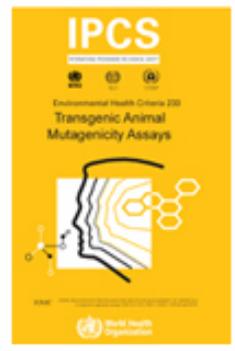
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International Programme on Chemical Safety

The International Programme on Chemical Safety (IPCS), established in 1980, is a joint programme of three Cooperating Organizations - ILO, UNEP and WHO, implementing activities related to chemical safety. WHO is the Executing Agency of the IPCS, whose main roles are to establish the scientific basis for safe use of chemicals, and to strengthen national capabilities and capacities for chemical safety.

FEATURES



EHC 233: Transgenic Animal Mutagenicity Assays
This document provides an introduction to the field of transgenic mutagenicity assays and assesses the possible role of these assays in toxicology testing and mechanistic research.
[More info](#)

SAICM
World Health Assembly welcomes new global chemicals agreement, the Strategic Approach to International Chemicals Management (SAICM), and urges Member States to take full account



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HIGHLIGHTS

FAO/WHO nutrient risk assessment project
[Full text](#)

Children & chemicals
Helping to protect children from the harmful effects of chemicals
[Full text](#)

Strategic Approach to International Chemicals Management (SAICM): Health Sector Focus
[Full text](#)

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Ionizing radiation

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Radiation accidents and emergencies



Although the likelihood of a major accident at a nuclear facility is low, should such an accident occur, protective actions near the facility and monitoring of radiation at longer distances would need to be taken to protect the public. Other radiation emergencies (for example, a radiation source appears in the human environment, patients undergoing radiotherapy treatment are accidentally overexposed) normally affect only a few individuals, but they occur much more frequently (several times each year). More recently the threat of possible terrorist attacks using radioactive materials or nuclear warheads has become prominent.

UN AGENCY CONTACT AND RESPONSE

For major nuclear and radiation emergencies the international organizations with relevant responsibilities have a Joint Plan for a co-ordinated response. The [International Atomic Energy Agency \(IAEA\)](#) is the prime coordinating agency for an international response to radiation accidents. Functional links have been established between agencies to ensure continuous communication and activation of the plan of action.

CHERNOBYL 20TH ANNIVERSARY

[More details](#)

QUICK LINKS

[Frequently Asked Questions \(FAQ\)](#)
[More information](#)

[Fact Sheets](#)
[More information](#)

[Cosmic Radiation](#)
[Full text](#)

[Depleted Uranium \(DU\)](#)
[Full text](#)

[Nuclear terrorism and dirty bombs](#)
Terrorists and nuclear threats have now become a possibility.
[More information](#)

CONTACT US

To provide feedback on

WHO Guidance – Where to find

- www.who.int/water_sanitation_health/
- www.who.int/ionizing_radiation/
- www.who.int/IPCS/emergencies/
- www.who.int/ipcs/poisons/
- www.inchem.org



Thank you