# A selection of resources dealing with Contingency Planning, Response Protocols, and Equipment.

## *Using the MARINER Knowledge Tool*

MAKING THE MOST OF THE EXISTENT KNOWLEDGE

MARINER

ENHANCING HNS PREPAREDNESS
THROUGH TRAINING AND EXERCISING

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# INDEX





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# INTRODUCTION

The aim of MARINER, a DG ECHO funded project, is to improve planning, preparedness and response to HNS spills by harnessing and capitalising existing HNS knowledge and resources, improving tools for decision making, reinforcing training and exercise capabilities, and increasing awareness and information exchange.

Aligned with its objectives, one of the MARINER tasks was the identification and compilation of existing HNS preparedness and response knowledge generated by EU funded public research, as well as other HNS related resources produced by international organisations dealing with maritime pollution, and make them easily available through a user friendly publicly available database: the **MARINER knowledge tool**. This online database allows users to search for resources by major HNS theme, organisation, projects, type of output, and funding source. Through a combination of simple and advanced queries, users can have direct access to resources or when appropriate, to the author's website. It currently stores information on 110 research projects and 28 organisations and contains 467 resources with relevance for HNS matters such as contingency planning, response protocols and equipment, environmental monitoring, impact and recovery, HNS characterisation, modelling, risk analysis, and training and exercising among others. The compiled resources include thematic reports, scientific publications, prototypes, software and modelling tools, books, guidelines, databases, services and tools, multimedia and training activities and materials.

With the help of the MARINER Knowledge Tool, and based on a criterion guided selection of HNS resources, this booklet provides an example on how the knowledge generated by expert organisations and EU projects have addressed HNS related issues relevant for "Contingency Planning" and "Response Protocols and Equipment".

Being aware that contingency planning and response are concepts that incorporate a wide range of components (protocols, guides, information, tools, etc.), for the purpose of this booklet we selected those that address these topics under a wide perspective, mainly manuals, guides and tools and that can help planners and responders in getting an overview of the issues that need to be considered. The resources selected have not been included in the booklet of training but they could be useful for that purpose too.



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Resources dealing with risk analysis, modelling, HNS characterization, and training and environmental impact are also key elements to be considered in the planning and response phases but they have been included in separate booklets to facilitate the usability and consultation.

A total of 32 resources have been selected keeping in mind the considerations mentioned earlier and the following criteria:

- Free online availability
- No confidentiality restrictions
- Development completed
- No limits in the geographic scope of application or easy adaptability to other areas
- Prioritisation of operational materials vs. scientific publications

To facilitate the reading of the booklet, resources have been listed in chronological order (most recent resources appear first) and grouped into 5 different categories according to resource types: guidelines and standards, reports, books and reviews, services and tools, and software and modelling tools. For each resource, a basic description (title, description, source, year of publication, and link to resource) is provided.

MARINER booklets are intended to demonstrate how knowledge can be compiled and clustered to facilitate its uptake. Nevertheless, to get a comprehensive overview of all the resources potentially relevant for the different thematic areas, readers are kindly invited to explore the full content and search functionalities of the **MARINER knowledge tool**.



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# GUIDELINES / STANDARDS

## Standard symbols and styles for mapping

**Summary:** This report presents the state-of-the-art in the use of different symbols for hazard and warning situations. It also includes a description and ready-to-use files of a set of symbols (to mark single location) and styles (to mark areas) proposed for marine HNS and oil spill incident maps. These symbols and styles are based on the symbology used in other hazard mapping systems.

**Project:** MARINER, Enhancing HNS preparedness through training and exercising

**Publication year:** 2017

**Language:** English

Link

## EU States Claims Management Guidelines. Claims arising due to maritime pollution incidents

**Summary:** Guidelines developed in the framework of the EMSA Consultative Technical Group for Marine Pollution Preparedness and Response intended to provide useful information when addressing claims management and cost recovery following maritime incidents

**Organisations:** EMSA, European Maritime Safety Agency

**Publication year:** 2016

**Language:** English

Link

## OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response

**Summary:** The aim of this second edition of Guiding Principles is to help public authorities, industry and communities worldwide to anticipate accidents involving hazardous substances resulting from technological and natural disasters, as well as sabotage. It addresses different issues related to prevention, preparedness, response and mitigation of chemical accidents. Two addenda are also available, the last being released in 2015.



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**Organisations:** OECD, Organisation for Economic Co-operation and Development

**Publication year:** 2015

**Language:** Chinese, Czech, English, French, German, Hungarian, Italian, Korean

Link

## Bonn Agreement Counter Pollution Manual

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**Summary:** The aims of the Manual are to enable the Contracting Parties to establish quickly, and to run effectively, the operational aspects of a multinational combating operation and to assist the Contracting Parties in their choice of proper combating strategies, including various ways of responding to an incident (or the threat of an incident) involving oil and/or other chemicals.

**Organisations:** Bonn Agreement Secretariat

**Publication year:** 2015

**Language:** English

Link

## Response to marine chemical incidents

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**Summary:** This Technical Information Paper published by ITOPF provides an introduction to the issues involved in responding to chemical spills and addresses the range of hazards present, the behaviour of chemicals when spilt at sea and briefly reviews available response options.

**Organisations:** ITOPF

**Publication year:** 2014

**Language:** English

Link

## Checklists for use in planning, responding and recovery phases

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**Summary:** A series of 14 quick reference checklists for use in planning, responding and recovery phases of shoreline incidents involving hazardous and noxious substances (HNS) and oils. These include: public health management, response plans, toxicological datasheets, Standard Operating Procedures (SOPs), detection and alert, exercise and training, response, public health countermeasures, Personal Protective Equipment (PPE), decontamination, environmental sampling and monitoring, risk communication, recovery and audits.

**Project:** ARCOPOLplus, Improving maritime safety and pollution response through technology transfer, training & innovation

**Publication year:** 2013

**Language:** English

Link

## Community Engagement Guidance for Oil and HNS incidents

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**Summary:** The purpose of this guidance is to enable good practices that promote successful engagement between a spill response organisation and affected communities in the vicinity of an oil or hazardous and noxious substance (HNS) incident. The guide is written to facilitate a shared understanding among spill responders, local authorities, and communities about opportunities and limitations for engagement at the community level before and during oil and HNS spills that occur in or near UK waters

**Project:** ARCOPOLplus, Improving maritime safety and pollution response through technology transfer, training & innovation

**Publication year:** 2013

**Language:** English

Link

## UK recovery handbook for chemical incidents (and associated publications)

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**Summary:** A guidance document specifically designed to aid decisions in managing the recovery phase of a chemical incident where contamination has affected Food production systems, Inhabited areas and Water environments.

**Organisations:** PHE, Public Health England

**Publication year:** 2013

**Language:** English

Link



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## Communicating public health risks associated with the maritime transportation of hazardous substances

**Summary:** The aim of this document is to provide a framework to support the proactive and reactive communication of public health risks associated with incidents involving the maritime transportation of hazardous substances.

**Project:** ARCOPOLplus, Improving maritime safety and pollution response through technology transfer, training & innovation

**Publication year:** 2013

**Language:** English

Link

## Audit of Shoreline Response Management Systems

**Summary:** Proposal for an audit of Shoreline Response Management Systems, including principles, planning, reviewing, preparing for and conducting audit activities, performance standards, sources to assess compliance and reporting.

**Project:** ARCOPOLplus, Improving maritime safety and pollution response through technology transfer, training & innovation

**Publication year:** 2013

**Language:** English

Link

## Guide for the significance of a Safety Data sheet

**Summary:** The document provides an explanation of the basic terminology and definitions contained in Material Safety Data Sheets (MSDS). MSDS is an important source of information on physical and chemical properties of a chemical that might be released during an accident, and it is essential that these are clearly understood by the personnel handling chemicals. MSDS regularly contain information on the biological and hazardous properties presented by the chemical in question and the preventive measures to be taken when the chemical is spilled.

**Organisations:** REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

**Publication year:** 2012

**Language:** English

Link



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## Guide for the Personal Protective Equipment and Monitoring Devices for Maritime Chemical Emergencies

**Summary:** The document gives background information on various aspects to consider in the acquisition of personal protection equipment and provides those in charge of response operations with the necessary information for the selection of the appropriate equipment in relation to the conditions and hazards encountered in a hazardous material spilled.

**Organisations:** REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

**Publication year:** 2012

**Language:** English

Link

## Theory and Proactive of Foams in Chemical Spill Response

**Summary:** The document aims at providing those involved in response operations with background information on the various technical issues associated with the use of foam as a response method. It contains four main sections: (i) the fundamentals of a foam, (ii) foam concentrates, (iii) the production of a finished foam, and (iv) the application of finished foam, and various Annexes, one of which (Annex III) lists common terminology associated with foam use.

**Organisations:** REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

**Publication year:** 2012

**Language:** English

Link

## Monitoring guide. Local Responders Methodology on Air Quality Monitoring

**Summary:** This document provides guidance on monitoring and sampling for human health exposure in the event of a maritime spill of Oil or Hazardous and Noxious Substances (HNS) close to the shore.

**Project:** ARCOPOL, Atlantic Regions' Coastal Pollution Response and Preparedness

**Publication year:** 2011

**Language:** English

Link



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## Guidance and Integrated Response procedure

**Summary:** The document contains very concise guidance and flowchart regarding protection of human health. It aims to assist responders to make decisions quickly and efficiently during an incident. It has been compiled to be included into "Local Authorities guide. What to do in the event of a spill?" and in specific HNS datasheets.

**Project:** ARCOPOL, Atlantic Regions' Coastal Pollution Response and Preparedness

**Publication year:** 2011

**Language:** English

Link

## Hazardous & noxious substances (HNS) response operation guideline

**Summary:** This regional guideline prepared by NOWPAP aims to give general recommendations and provide information needed for proper decision making when responding to accidents in the marine environment involving chemicals and dangerous goods. Chapters 1 and 2 are focussed on first actions and risk assessment (properties, spill behaviour and drift forecasting), and chapters 3 - 6 addresses monitoring, sampling, body protection, and response. Annex A contains terminology, and Annex B contains the list of CEDRE's operational Guidelines.

**Organisations:** NOWPAP MERRAC, Northwest Pacific Action Plan - Marine Environmental Emergency Preparedness and Response - Regional Activity Centre

**Publication year:** 2010

**Language:** English

Link

## Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants - TP 9834 E (2009)

**Summary:** These Guidelines intend to enable the proper authorities to be informed without delay so that appropriate action may be taken when: i) any incident occurs involving the loss, or likely loss, overboard of packaged dangerous goods in the sea; or ii) any incident occurs giving rise to pollution, or threat of pollution to the marine environment, as well as of assistance and salvage measures; or iii) any oil pollution incident occurs involving the loading or unloading of oil to or from a vessel at an oil handling facility.

**Organisations:** Transport Canada



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**Publication year:** 2009

**Language:** English

Link

## WHO Manual: The Public Health Management of Chemical Incidents

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**Summary:** The purpose of the WHO Manual is to provide a comprehensive overview of the principles and roles of public health in the management of chemical incidents and emergencies. The target audience includes public health and environmental professionals, as well as any other person involved in the management of chemical incidents.

**Organisations:** WHO, World Health Organization

**Publication year:** 2009

**Language:** English, French, Spanish

Link

## ExxonMobil response guidance for first responders to maritime petrochemical spills

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**Summary:** This document is intended for ExxonMobile employers and contractors and presents concise recommendations concerning response strategies for petrochemical spills. The focus is on maritime petrochemical spills (tanker and barge transport).

**Organisations:** ExxonMobil

**Publication year:** 2005

**Language:** English

Link

## Practical Guide to Marine Chemical Spills. Regional Information System, Part D, Operational Guides and Technical Manuals, Section 11

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**Summary:** The guide contains response options presented in decision-tree format and tables, matrices and diagrams, some of which represent actual experiences. The decision-trees are based on the behaviour classification system for chemicals spilled at sea. Other sections contain information on the behaviour and compatibility of commonly transported chemicals, the resistance of equipment material to chemicals and safety precautions when entering spill sites.



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**Organisations:** REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

**Publication year:** 2003

**Language:** English

Link

## Guide for Risks of Gaseous releases resulting from Maritime Accidents

**Summary:** The document provides emergency-planning personnel with informative background on the issues related to releases of gases, and it is intended for the response personnel, in particular decision-makers, who have a basic maritime and technical background. The document deals with the following topics: aspects of the chemistry of gases pertaining to their carriage at sea, container systems for packaged gases, layouts of gas carriers, international regulations governing the transportation of gases by sea, hazardous properties of gases, behaviour of airborne gas releases, and response measures for gas releases.

**Organisations:** REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

**Publication year:** 1996

**Language:** English

Link

## Health and Safety Guides

**Summary:** These guides provide concise information in non-technical language, for decision-makers on risks from exposure to chemicals, with practical advice on medical and administrative issues.

**Organisations:** WHO, World Health Organization

**Language:** English

Link



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# REPORTS

## Protocols for responding to HNS spills at sea

**Summary:** This report provides guidance for responders and includes adapted protocols to deal with HNS spills in the marine environment. Different land services operations and protocols are analysed here and adapted for the different steps: pre-planning considerations, communication and operational procedures, and technical considerations. Protocols also cover different behaviours of HNS (evaporators, floaters, sinkers and dissolvers) were evaluated, as well as recommendations to better deal with HNS spills at sea.

**Project:** MARINER, Enhancing HNS preparedness through training and exercising

**Publication year:** 2018

**Language:** English

Link

## Action Plan for HNS Pollution, Preparedness and Response

**Summary:** The EMSA HNS Action Plan provides: 1) A concise overview of existing available information in the field of preparedness and response to HNS marine pollution, including information on: seaborne transportation of HNS, past HNS incidents, challenges and impacts of HNS marine pollution, existing HNS pollution preparedness and response mechanisms, and options and limitations of response methods to such incidents; and 2) A framework document defining the Agency's role and activities in this field in order to make an "added value" contribution at European level and strengthen existing preparedness and response capabilities.

**Organisations:** EMSA, European Maritime Safety Agency

**Publication year:** 2014

**Language:** English

Link

## Technical Report - Safe Platform Study. Development of vessel design requirements to enter & operate in dangerous atmospheres

**Summary:** The objective of this report is to propose and describe vessel design requirements to enter hazardous environments and having the capability of performing various operational aspects during Hazardous and Noxious Substances (HNS) incidents at sea, whilst protecting



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their crew and preventing an escalation of the incident. This also covers the adaptation/modification of existing vessels for HNS incident response.

**Organisations:** EMSA, European Maritime Safety Agency

**Publication year:** 2012

**Language:** English

Link

## Hazardous & noxious substances (HNS) database in the NOWPAP region

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**Summary:** As part of the measures taken to prepare the NOWPAP region against HNS a group of experts developed this HNS database. It is structured around 25 substances that were selected based on transportation volumes and accident records. This report also informs about Material Safety Data Sheets (MSDS) for HNS Spill response, reviews other HNS databases and discusses ways to establish a database on HNS substance information, in response to possible HNS spills in the NOWPAP region.

**Organisations:** NOWPAP MERRAC, Northwest Pacific Action Plan - Marine Environmental Emergency Preparedness and Response - Regional Activity Centre

**Publication year:** 2010

**Language:** English

Link



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# BOOKS / REVIEWS

## Chemical Spill Response Manual

**Summary:** A two year programme has been carried out by the NHL University of Applied Sciences together with private companies in the field of oil and chemical spill response to produce a series of specific manuals related with oil and chemical spill response.
This manual is focused on chemical spills and gives an overview of all aspects relevant for the response.

**Organisations:** NHL University of Applied Sciences, dept. Maritime, Marine, Environment & Safety Management

**Publication year:** 2011

**Language:** English

Link

## Aerial Operations Handbook

**Summary:** The Bonn Agreement Contracting Parties have adopted a plan for all coastal states to conduct periodic and random surveillance flights for the detection of spillages in the offshore oil and gas industry areas in the North Sea. Irrespective of the main aim, all other suspected polluters (also including HNS) are also to be identified and reported. These surveillance flights are entitled 'Tour de Horizon Flights'. Annex II includes information about HNS categorisation system and discharge regulations.

**Organisations:** Bonn Agreement Secretariat

**Publication year:** 2009

**Language:** English

Link



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# SERVICES / TOOLS

## HNS website

**Summary:** Primary resource reference for the HNS Convention (information on the convention, resources, implementation, etc.). The website includes an HNS finder tool that allows searching the list of all HNS defined by the 2010 HNS protocol. It also includes forms and guidelines for reporting, and other resources such as incident scenarios presentation tool, a HNS blog, and useful publications.

**Organisations:** IOPC Funds, the International Oil Pollution Compensation Funds

**Publication year:** 2017

**Language:** English, French, Spanish

Link

## Maritime Integrated Decision Support Information System-MIDSIS TROCS

**Summary:** MIDSIS-TROCS is a decision support system aiming at assisting decision-makers to select measures to be taken related to plausible hazardous material marine spill. It thus provides options for responding to marine chemical emergencies and presents them in a structured format which can facilitate the decision making process. The main added value of this tool in comparison with other existing HNS tools is the availability of accidents reports linked to a specific chemical. The chemical data gathered in the tool has been updated to reflect the developments which took place at the international level.

**Organisations:** REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

**Publication year:** 2009

**Language:** English

Link

**Support resource:**

### Video on the Maritime Integrated Decision Support Information System (MIDSIS-TROCS)

**Summary:** Short video presentation of the decision support tool “Maritime Integrated Decision Support Information System – MIDSIS-TROCS".

**Organisations:** REMPEC, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

**Publication year:** 2003

**Language:** English

Link



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# SOFTWARE / MODELLING TOOL

## CAMEO software suite

**Summary:** The Office of Response and Restoration (OR&R) of NOAA developed the CAMEO software suite, to help emergency responders and planners to assess hazardous material releases and protect public health and safety. CAMEO is a group of programs than can be used by first responders and planners to help them prepare for and deal with hazmat emergencies.

**Organisations:** NOAA, National Oceanic and Atmospheric Administration - US Department of Commerce

**Language:** English

Link



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