A selection of resources dealing with HNS Characterisation

Using the MARINER Knowledge Tool

MAKING THE MOST OF THE EXISTENT KNOWLEDGE

MARINER

ENHANCING HNS PREPAREDNESS
THROUGH TRAINING AND EXERCISING

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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 "HNS characterisation".

A total of 33 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

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- Prioritisation of operational materials vs scientific publications

Resources selected in this area of knowledge are mainly dealing with the study of HNS: description of properties, behaviour, classification and labelling. Under the category of guidelines and standards the reader will find compilations of Maritime Safety Data sheets (MSDS), chemical compendiums, and procedures for hazard evaluation. The selection includes reviews of fate and weathering of HNS, reports about HNS behaviour, a couple of online tools for checking HNS characteristics and a modelling tool for predicting chemical reactivity.

To facilitate the reading of the booklet, resources have been listed in chronological order (most recent resources appear first) and grouped into 6 different categories according to resource types: guidelines and standards, reports, books and reviews, services and tools, software and modelling tools, and databases. 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

Chemical hazards compendium

Summary: The compendium is a resource for the public and those professionals responding to chemical incidents, including emergency services and public health professionals. It has 3 sections: 1) general information on the chemical 2) toxicological overview of the compound and, 3) incident management focusing on information needed during chemical incidents, such as physicochemical properties, health effects and decontamination. For some chemicals all 3 sections are available and are also compiled into 1 document.

Organisations: PHE, Public Health England

Publication year: 2016

Language: English

Link

GESAMP Composite List

Summary: The GESAMP Composite includes the list of harmful liquid substances evaluated by the GESAMP Environmental Hazards of Harmful Substances Working Group (EHS) and their assignation of “GESAMP Hazard Profiles (GHP)”, an easily read fingerprint of the hazard characteristics of each substance. The resulting profiles are added to a rolling list containing all GHPs assigned by the working group since its inception, which is updated and published annually by the International Maritime Organization (IMO).

Organisations: GESAMP**,** Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection

Publication year: 2016

Language: English

Link

Globally harmonised system of classification and labelling of chemicals (GHS)

Summary: This document describes the classification and labelling system called "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)". This system addresses classification of chemicals by types of hazard and proposes harmonized hazard communication elements, including labels and safety data sheets. It aims at ensuring that information on physical hazards and toxicity from chemicals be available in order to enhance the protection of human health and the environment during the handling, transport and use of these chemicals. The GHS also provides a basis for harmonization of rules and regulations on chemicals at national, regional and worldwide level, an important factor also for trade facilitation.

Organisations: UNECE**,** United Nations Economic Commission for Europe

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Publication year: 2015

Language: English

Link

The Revised GESAMP Hazard Evaluation Procedure, 2nd Edition

Summary: The second edition of the Revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships sets out an updated set of criteria for evaluating the hazards of chemical substances that may be released into the marine environment from ships, either from operational discharges, accidental spillage, or loss overboard.

Organisations: GESAMP, Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection

Publication year: 2013

Language: English

Link

ARCOPOLplus Marine Safety Data Sheets

Summary: Datasheets including relevant information on a series of HNS regarding their chemical and physical characteristics as well as response tips when dealing with a maritime incident involving these substances.

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

Publication year: 2013

Language: English

Marine Safety Data Sheets:

- Tar wastes MSDS
- Organic acids MSDS
- Oily wastes MSDS
- Inorganic acids MSDS
- Hypochlorite MSDS
- Caustic liquids MSDS

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

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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

ARCOPOL Maritime Safety Data Sheets (MSDS)

Summary: HNS Maritime Safety Data Sheets including relevant information on 10 HNS. These MSDS contain information regarding their chemical and physical characteristics as well as response tips when dealing with a maritime incident involving these substances.

Project: ARCOPOL - Atlantic Regions' Coastal Pollution Response and Preparedness

Publication year: 2011

Language: English

Marine Safety Data Sheets:

- 2-Amino-2-Methyl-1-Propanol MSDS
- 2-Aminoethoxy Ethanol MSDS
- 3-Methyl Pyridine MSDS
- Ammonia MSDS
- Vinyl Chloride MSDS
- Formaldehyde MSDS
- Dimethylamine MSDS
- Methylamine MSDS
- Ethylene oxide MSDS
- Chlorine MSDS

Guidance on the preparation of Safety Data Sheets (SDS)

Summary: This document provides guidance on the preparation of a Safety Data Sheet (SDS) under the requirements of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS). SDS's are an important element of hazard communication in the GHS. Use of this guidance should support compliance with Competent Authorities requirements and should allow the SDS to be prepared in accordance with GHS.

Organisations: UNECE, United Nations Economic Commission for Europe

Publication year: 2011

Language: English

Link

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Datasheets with toxicological environmental data

Summary: This document outlines available toxicological data on 24 HNS that pose major environmental risk to the EU Atlantic marine environment

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

Publication year: 2010

Language: English

Link

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REPORTS

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

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

Review of the fate and weathering of HNS involved in previous spills

Summary: This review aims to exploit the accessible information on the fate and weathering of HNS involved in incidents of particular interest, first and foremost in Europe, secondly out of it, to build return of experience datasheets for those chemicals of particular interest.

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

Publication year: 2013

Language: English

Link

Review of the fate and weathering of priority HNS

Summary: This review describes and discusses in detail various parameters that determine the fate, behaviour and weathering of the priority HNS. Priority HNS were selected in a previous ARCOPOL project (see report on this link http://www.arcopol.eu/?/=/section/resources/search/1/resource/70

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

Publication year: 2013

Language: English

Link

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SERVICES / TOOLS

HNS online Platform

Summary: This HNS online platform provides systematized information of HNS properties and spills response, educational tools, guidelines and protocols, environmental sensitive index for the Portuguese coast and modelling tools. This platform aims to support preparedness and response to accidental spills (including Oil), to foster a more effective decision-making process and response. This online platform also includes the HNS spill database that collect information on the fate and weathering of HNS accidentally spilt at sea around the world.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Language: English

Link

HNS Finder

Summary: An interface developed to provide users with access to the consolidated list of all HNS as defined by the 2010 HNS Protocol. It provides information on HNS classification criteria and whether or not a substance qualifies as contributing cargo for the purpose of reporting. In addition, if a particular substance is considered contributing cargo, the result also indicates to which HNS Account the substance belongs.
Work is now underway to develop the “Calculator” feature of the HNS Finder. This functionality will enable the receiver of HNS, having identified the substances qualifying as contributing cargo using the HNS Finder, to compile its own report online for transmission to the relevant government authority within the State Party.

Organisations: IOPC Funds,The International Oil Pollution Compensation Funds

Publication year: 2011

Language: English

Link

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SOFTWARE / MODELLING TOOLS

Chemical Reactivity Worksheet

Summary: The Chemical Reactivity Worksheet (CRW) is a free software program you can use to find out about the chemical reactivity of thousands of common hazardous chemicals, compatibility of absorbents, and suitability of materials of construction in chemical processes. The chemical datasheets in the CRW database contain information about the intrinsic hazards of each chemical and about whether a chemical reacts with air, water, or other materials. They also include case histories on specific chemical incidents, with references.

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

Publication year: 2016

Language: English

Link

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DATABASES

IPCS INCHEM

Summary: Database providing 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 organisations whose goal it is to assist in the sound management of chemicals.

Organisations: WHO, World Health Organization

Publication year: Launched in 1997

Language: English

Link

International Chemical Safety Cards (ICSC) database

Summary: The International Chemical Safety Cards (ICSC) database has been developed to provide online access to the collection of ICSC from a single, continuously-updated source. This permits newly created or amended ICSCs to be made available as soon as they have been validated for publication. The preparation of ICSC is an ongoing process of drafting and peer reviewing by a group of scientists working for a number of specialized scientific institutions concerned with occupational safety and health in different countries. The international peer-review process followed in the preparation of ICSC ensures the authoritative nature of the Cards and represents a significant asset of ICSC in contrast with other packages of information. It is available in different languages.

Organisations: ILO, International Labour Organisation

Publication year: Launched in 1980 and kept updated

Language: English

Link

HNS database

Summary: A freely accessible HNS database containing names and regulation, physico-chemical parameters, behaviour, ecotoxicity, GESAMP profiles and hazards of 120 substances. The database is searchable through the HNS-MS public website and remotely searchable with the public rest API.

Project: HNS-MS, Improving preparedness to face HNS pollution of the marine system

Publication year: 2017

Language: English

Link

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ChemAgora web portal

Summary: The JRC's ChemAgora web portal provides search capabilities to retrieve chemical data from a plethora of online resources enabling users to access both regulatory information on chemicals and public databases on chemical properties. ChemAgora is intended to support chemical risk assessment activities by assisting stakeholders to gain a quick overview of globally available data about chemicals they are interested in. This speeds up the process of data discovery and saves valuable resources. ChemAgora, through an on-the-fly search, informs whether a chemical features in any of 17 external data sources or the OECD eChemPortal (featuring another 30 external sources), and provides clickable links leading to the third-party website pages containing the information.

Project: diXa, Data Infrastructure for Chemical Safety

Publication year: 2017

Language: English

Link

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