Marine incidents involving HNS and EMSA's services for chemical spills

HNS-MS Final Stakeholder Meeting

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Oil versus HNS spills

- Chemical spills less frequent than oil spills;
- Consequence of a chemical spill can be more severe;
- Growing awareness for the need to have safe and effective contingency arrangements for chemical spills.

However, response to chemical spills is not as straightforward as for oil, because:

- wide variety of chemicals transported;
- varying physical and chemical properties;
- different behavior in the environment; and
- effects on human health and environment.

EMSA

Hazardous Material:

- Substance capable of posing an unreasonable <u>risk to health</u>, safety, and property when transported in commerce (US DOT)
 - includes: hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table.

Dangerous Goods:

Substances which are capable of posing a <u>risk to health</u>, safety, property or the <u>environment</u> and which are shown in the list of dangerous goods in these regulations or which are classified according to the Regulations (IATA).





Hazardous and Noxious substances (HNS):

Definition in OPRC-HNS Convention:

A Hazardous and Noxious Substance is defined as any substance other than oil which, if introduced into the <u>marine environment</u> is likely to create hazards to <u>human</u> <u>health</u>, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

The maritime transport of HNS has inherent risks associated

Types of accidents:

- Groundings/collisions hull damage spill
- Capsizing spill
- Fire noxious gases
- Explosion hull damage spill
- Chemical reaction in cargo heat heat hull damage







EMSA

Maritime codes define and prescribe design and building standards for ships and equipment for the carriage of chemicals.

Definition and prescription of cargo operations:

- Loading / unloading of cargo;
- Storage requirements;
- Emergency operations.





HNS includes many different substances with different behaviours

HNS bulk transport:

- Large quantities of chemicals on board;
- In case of incident the substance(s) will be directly released into the environment.

HNS packaged:

- Small(er) quantities per substance on board,
- But many types of chemicals;
- The container/package might delay/prevent the release of the substance(s) into the environment.



Response operations for HNS in bulk:

- Depending on the physical behaviour of the chemical;
- Limited response options.

Response operations for HNS packaged:

Recovery of containers/drums.

Reactivity with water, air and other chemicals on board.

Cargo manifest mis-declarations.





First stage:

- Identification of the substances involved/on board (location!);
- Information on the <u>hazards</u>, behaviour, physical and chemical properties of the substance;
- Evaluate the risks for the crew on board and responders <u>before</u> deploying the emergency response operations.

Second stage:

Ship integrity information.

Third stage:

Information for salvage operations.





Proper IMDG and IBC code names should be used in marine transport, but various synonyms are also used.

CAS registry number:

- Uniquely assigned to each compound;
- Up to 10 digits.

UN number:

- Based on hazard rather than on name;
- Always 4 digits;
- Substances with similar properties may have common UN number, others have individual UN numbers.



Key questions arising during an HNS incident:

- Substance's behaviour (European behaviour classification system);
- Existing safeguards on board of the ship;
- Precautions needed to approach the incident area;
- How to control the situation?



No intervention possible:

Due to substance behaviour (solubility, evaporation, etc.).

Non-intervention:

- Risk for responders (fire, explosion, toxicity);
- Substance(s) unknown.

Intervention:

- No risk or mitigated risk for responders;
- Substance persists;
- Substance contained/confined;
- Containers floating/beached.



EMSA's fields of competence





Maritime safety

Maritime security (Copernicus)

Prevention of pollution caused by ships







EMSA's objectives

Response to pollution caused by ships





Response to pollution caused by oil and gas installations

Pollution Response Services

EMSA

□ Network of Oil Spill Response Vessels

□ Seaborne Dispersant Application Service

□ Stand-alone Equipment Modules (EAS)

□ CleanSeaNet monitoring & detection service

□ HNS Support tools: MAR-ICE, MAR-CIS





Expert information service on chemical substances (3-Party Agreement)

European Maritime Safety Agency

Established in 2008; operational since Jan. 2009

How does it work:

- Contact single entry point, via phone, fax or email;
- Availability 24/7; free of charge to requester

Requesting parties:

- 28 EU States
- Coastal EFTA/EEA & EU Candidate Countries





Cefic 8





- Remote HNS product & incident specific information, documents & advice (1h)
- Input from chemical industry
- On a case-by-case basis, the service provides:
 - # Risk assessment for responders and the environment;
 - # Drift and weathering modelling results;
 - # Advice on response methods and options.

- MAR-CIS datasheets provide maritime relevant information for the initial stage of chemical incidents.
- There are 213 datasheets, covering critical information needed for emergency response at sea:
 - Substance identification
 - Shipping information
 - Hazards and risks
 - Emergency measures
 - • •
- MAR-CIS database was already distributed to MSs MPPR authorities

New phase of the project focuses on the dissemination of the MAR-CIS information via:

- MAR-CIS web portal
- MAR-CIS Application for mobile devices for offline access to the information (e.g. at the incident site).
- CHD web portal, SafeSeaNet's CentralHazMat database







The users will have access to MAR-CIS web portal through EMSA's Maritime applications portal.

https://portal.emsa.europa.eu/.



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Chloro form	67-66-3												
Chloro sulphonic acid	7790-94-5												
Di <mark>chloro</mark> methane	75-09-2												
Epi <mark>chloro</mark> hydrin	106-89-8												
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Substance properties

Colourless toxic liquid substance with dangerous fire effluent, may form explosive mixtures. Pungent, acrid odour. Corrosive to most metals. Dissolver. 12.10









EMSA MAR-CIS			Welcome MARCIS User			A Home	کې C. Panel	Portals	C+ Logout
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Identification	Substance properties	Shipping information	Hazards & risks	Emergency measures	Case histories	Physical & prope	chemical erties	O na	ther imes
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Fire f	fighting								
Extinguishing media :		Sr W	mall: CO2, powder, alco ater spray. <u>10,630</u> ove containers from fir	hol-resistant foam	n, water spray. Larg	e: alcohol-resista	ant foam,		
Personal protective equipment :			later disposal; do not scatter the material. ³⁶⁸ Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and special tightly sealed suit. Respiratory protection: In an emergency respiratory protection must be worn. Respiratory protection: Gas filter A, colour code brown. Perhaps also necessary for improved protection: Combination filter A - P2 or A - P3, recommended A - P3, colour code: brown-white. Use insulating device for concentrations above the usage						



The purpose of CHD (Central Hazmat Database) is:









Any questions?

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