



GESAMP

Joint Group of Experts on the
Scientific Aspects of Marine
Environmental Protection

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Agenda item 4

PLANNING OF GESAMP ACTIVITIES: EVALUATION OF THE HAZARDS OF HARMFUL SUBSTANCES CARRIED BY SHIPS

Report of the Chairman of Working Group 1

1 Since the last session of GESAMP, Working Group 1 has met once (EHS 52). The meeting was held at the IMO in London from 13 to 17 April 2015. The full report has been circulated as IMO circular PPR.1/Circ.2.

Use of the work

2 As outlined in the previous report to GESAMP, the GESAMP Hazard Profiles (GHP) developed by Working Group 1:

- .1 contain a unique fingerprint for each substance, providing information on fourteen separate human health, environmental and physico-chemical hazard criteria and consist of an alphanumeric notation designed to communicate the hazards;
- .2 are published by IMO annually as the GESAMP Composite List (circulated together with the meeting report as a PPR.1/Circular) and are placed on the IMO website for the use of maritime Administrations, the shipping industry and chemicals manufacturers; and
- .3 provide the basis for the pollution categorization of over 900 substances. MARPOL Annex II and the International Bulk Chemical Code utilise these profiles to define the pollution category, ship type and carriage conditions associated with each chemical.

3 During the last several decades, the use of the GESAMP Hazard Profiles (GHP) has increased. Member State Administrations and IMO bodies, in particular the PPR Working Group on the Evaluation of Safety and Pollution Hazards of Chemicals (ESPH), have based the assignment of carriage requirements for the transport of bulk liquids on these GESAMP ratings, as required by international maritime legislation. This was not limited to pollution hazards, but also covers ship safety and occupational health aspects. The IMO Sub-Committee on Pollution Prevention and Response (PPR) is now developing a revised Chapter 21 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) revising the hazard classification criteria used for assigning carriage requirements. The current draft makes direct reference to all carriage conditions requiring an evaluation of hazards to human and environmental health.

Guidance published

4 The guidance for the hazard evaluations was finalized in 2014 and published as a new edition of GESAMP Reports and Studies No.64 "Revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships, 2nd Edition". The purpose of the second edition is not to completely replace the previous version of the GESAMP hazard evaluation procedure, but to update it with as little disruption as possible to the users and with minimal impact on the maritime regulations. It only introduced changes where necessary, in particular to ensure harmonization

with the United Nations “Globally Harmonized System of Classification and Labelling of Chemicals (GHS)”.

Evaluation and hazard rating

5 However, there are still some minor discrepancies with the GHS in the area of acute mammalian inhalation toxicity. This resulted from the finalization of the revised GESAMP procedure about 15 years ago when the GHS had not yet been finalized and also given the IMO regulations were not fully harmonized with the GHS. At that time, GESAMP only evaluated the hazards of chemicals to the marine environment and those created by spills, but did not address any risks to crews resulting from possible exposure to vapours from tank openings on deck. During operational procedures, crews are exposed only to vapours, whereas under accidental leakage or spillage at sea, people may be exposed to aerosols or a mixed atmosphere with vapours and aerosols (mists). The focus of GESAMP therefore was on aerosol exposure or mixed exposure.

6 During the last meeting, the Group discussed the situation and developed a specific notation for those chemicals which would show a much lower hazard as pure vapour compared to aerosol exposure. Full harmonization between the GESAMP evaluation procedure and the GHS would need a re-evaluation of about 900 products and would have a major impact on the current maritime regulations governing the transport of bulk liquid cargoes. For about two thirds of the products, inhalation hazard classification would not be possible, as there are no animal test data available and the GESAMP acute inhalation toxicity extrapolation method will not work under the GHS criteria. Based on these arguments, full harmonization has not been introduced.

7 In evaluating some chemicals in respect to the aspiration hazard according to the GHS criteria, which are now fully introduced by GESAMP, the group experienced difficulties in interpreting the GHS criteria for Aspiration Toxicity Category 1. The group therefore agreed to refer this matter to the competent UN Sub-Committee of Experts on the GHS for further clarification.

8 On request by IMO and in an attempt to further harmonize the GESAMP procedure with the GHS, a new hazard classification system for sensitizers has been introduced with the 2nd edition of GESAMP Report and Studies No.64. The sensitizer category, which had previously only identified a substance as a ‘sensitizer’, has now been broken down into two categories: skin sensitizer and respiratory sensitizer. More than 100 chemicals were re-evaluated by the experts intersessionally to align the existing hazard profiles with this new change. The results of this work were discussed and agreed during the last session of EHS and new sensitizer ratings were assigned for all concerned chemicals.

9 As part of the routine work of the Working Group 1, five new substances were reviewed in order to assign full GESAMP Hazard Profiles. Based on correspondence with industry, 19 additional substances were re-evaluated.

10 The group confirmed that a review of the family of alkanes would be beneficial and started this work during the last session. This work will have significant implications, as many mineral oil products typically contain alkanes as a significant fraction, and a number of spillages of paraffin (long-chain alkanes) have been reported throughout Europe along many countries’ coastlines. The Group noted that in particular high-viscosity paraffins transported as pure chemicals and as crude products from the mineral oil refinery process will need detailed hazard assessments. A substantial volume of additional data on alkanes and alkenes had been compiled intersessionally by the Chairman and the Secretariat from various sources, including the OECD, US Environmental Protection Agency and the European Chemicals Agency. Due to time constraints, the group was unable to complete this work and, as a result, the work will continue at EHS 53 in 2016.

Spillage and response

11 The group discussed the rationale for presenting hazard information on the physical behaviour of chemicals spilled at sea (E2 rating). There are products consisting of chemicals which will dilute in the water phase and others which will float on the sea surface. In the past, the most severe impact was rated by the experts. As the GESAMP Hazard Profiles are increasingly used for spill response, this approach could mislead first responders and those involved in combating spills. The group therefore developed a notation for the hazard profiles in the GESAMP Composite List that will, in specific cases, explain that different physical behaviours are expected.

12 The group recalled that it had incorporated a system in its guidance (Reports and Studies 64) that built upon the Bonn Agreement behaviour classification system, in particular for floating substances. It was also recalled that these particular definitions for floating substances had been developed to address the specific behaviour of such substances when released into the marine environment and were used in a number of IMO documents and manuals. As these terms were finding increasing usage, the group suggested that it may be useful to ensure any future criteria that may be developed by the GHS to define floating substances should take note of the current system developed by GESAMP/EHS, as set out in the Reports and Studies 64. This would ensure a harmonized approach and, in this context, the group agreed that a document would be submitted to the Sub-Committee of Experts on the GHS so that they are made aware of what has been developed by GESAMP/EHS and then take any action as appropriate.

13 The Chairman of the working group participated and delivered a presentation on "Cargo information needed during the initial stages of a chemical spill" at the Interspill 2015 Conference, which took place from 24 to 26 March 2015 in Amsterdam, the Netherlands. The Chairman indicated that, further to this presentation about the work of GESAMP, the feedback provided by attendees had suggested that the addition of information on flammability and explosivity limits would be a useful addition to the GESAMP Hazard Profile for the purposes of hazard assessment for spill response.

14 As the group recognized that such information was generally included with new product submissions, it was agreed that future consideration could be given to including this as an additional E rating. However, given that the revised Reports and Series No. 64 had only recently been published, it was agreed that a decision on this proposal would be deferred for the time being.

Membership issues

15 The group discussed its ongoing efforts to secure an additional toxicologist to join the group.

16 To enhance the visibility of the GESAMP Working Group 1 in communities involved in marine science and marine environmental protection, the output of the Working Group (the yearly reports and the GESAMP Composite List), the potential utility of the GESAMP hazard profiles and the competence of its membership should be better presented on the GESAMP web site (www.gesamp.org). Activities by the GESAMP Secretariat led to a more comprehensive presentation of the work of Working Group 1. However, further work is needed in this respect.

Funding issues

17 The funding of Working Group 1 is based on a fixed fee which is charged for each new product evaluation. It was noted, however, that to date no additional fees were applied for cases where some follow-up action was needed on a specific issue, for example, to clarify study methodology details or where the GESAMP/EHS experts had questioned particular test results. During the last session, five chemicals were evaluated under the fixed fee payment system. About 20 chemicals were re-evaluated based on industry requests free of charge, based on the current EHS policy for re-evaluations. As a result of new regulations in Europe and similar activities in America and Asia, as well as the OECD chemicals programme, many new test data are being

produced by the industry or have been made publicly available for the first time. As a consequence, EHS is facing an increasing number of industry and administration requests for re-evaluation of one or more ratings associated with substances on the GESAMP Composite List.

18 The group noted that it was important that the group remain on a solid and self-sustaining financial footing to ensure that sufficient funds were in place to meet the financial obligations of the group, notably the costs associated with the preparations and hosting of an annual GESAMP/EHS meeting, i.e. travel/DSA costs, consultancy fees and meeting hosting requirements, in order to ensure no interruptions in the regulatory flow of which GESAMP/EHS is a pivotal part. The group also reaffirmed its operation as a non-profit body, but underscored the need to ensure that its finances allow it to, as a minimum, break even and to retain some surplus. Sustainable financing for the group depends on a critical mass of submissions of an average of five to six submissions per year, noting that there will be fluctuations in the number of submissions year on year, thus the need for retaining a level of surplus in its accounts.

19 The group also noted the change in its manner and method of work with regard to the assessment of submissions, with a concerted shift in the past several years from reviewing original test data that accompanied submissions, to accessing referenced test data that is available through established regulatory systems such as OECD, GHS and through EU databases (REACH and CLP). This was recognized to be a much less burdensome requirement for the submitters, but much more work intensive for the experts and Secretariat in terms of the time commitment needed to access, compile and assess these data prior to and during meetings of GESAMP/EHS. It was also noted that the number of re-evaluations being requested was steadily increasing, most of which were geared towards consideration of new data to justify a lowering of the respective GHP ratings that would, in many cases, lower the carriage requirements, ultimately resulting in a commercial benefit for the submitter.

20 Having considered the time requirement per assessment and noting the shift in trend with regard to referencing data from other sources, rather than submitting original test reports for the experts to consider directly, it was determined that a re-evaluation now represented between 25% to 30% of the time that would normally be required to evaluate a new submission. Having considered more aspects and points in this respect, the group proposed the introduction of a fee for re-evaluations at a rate of USD 1800 per request, and to refer the matter to the appropriate IMO bodies for consideration, with a view to subsequent approval.

Action requested of GESAMP

21 GESAMP is invited to consider the information provided and take action as appropriate.
