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GUIDELINES FOR THE PROVISIONAL ASSESSMENT OF LIQUID SUBSTANCES TRANSPORTED IN BULK

1 The Marine Environment Protection Committee, at its seventy-fourth session (13 to 17 May 2019), recognizing the need to update MEPC.1/Circ.512 to capture all relevant decisions in relation to the assignment of carriage requirements under the IBC Code following the adoption of the 2019 amendments to the IBC Code, which included the revised chapters 17, 18, 19 and 21, approved the revised *Guidelines for the provisional assessment of liquid substances transported in bulk*, which are set out in the annex.

2 Member Governments and international organizations are invited to bring the annexed Guidelines to the attention of Administrations, recognized organizations, port authorities, shipowners, ship operators and other parties concerned.

3 This circular revokes MEPC.1/Circ.512.

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ANNEX

GUIDELINES FOR THE PROVISIONAL ASSESSMENT OF LIQUID SUBSTANCES TRANSPORTED IN BULK

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1 INTRODUCTION

1.1 The carriage of liquid substances in bulk is regulated by SOLAS, as amended, and MARPOL, as amended, which collectively address both safety and pollution prevention considerations.

1.2 Liquid substances that may be offered for shipment in bulk can be divided into the following groups:

.1 liquefied gases;

.2 oils; and

.3 noxious and non-noxious liquid substances, hereinafter referred to as "products".

1.3 Liquefied gases listed in chapter 19 of the International Code of the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) are subject to the provisions of that Code. For tripartite agreements established under the provisions of the IGC Code (after 1 January 2016), reference is made to resolution MSC.370(93), as amended.

1.4 "Oil", as referred to in paragraph 1.2.2 above, is defined as per MARPOL Annex I.

1.5 "Energy-rich fuels" obtained from biological origin or non-petroleum sources as defined in the *Guidelines for the carriage of energy-rich fuels and their blends* (MEPC.1/Circ.879), are considered as MARPOL Annex I cargoes. When carrying energy-rich fuels listed in annex 12 to the MEPC.2/Circular on *Provisional categorization of liquid substances in accordance with MARPOL Annex II and the IBC code*, the requirements of MARPOL Annex I, rather than MARPOL Annex II, should apply.

1.6 Trade-named mixture as defined in lists 2, 3 and 4 of the MEPC.2/Circular, means a mixture or solution composed of two or more components which are mixed but not chemically combined or reacted, and which can be separated by physical means.

1.7 A number of products can be shipped either on gas carriers or chemical tankers. These are included in both chapter 19 of the IGC Code, marked with an asterisk, and in chapter 17 of the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code).

1.8 Each liquid substance offered for carriage in bulk should be identified as either a "liquefied gas", an "oil" or a "product". These Guidelines apply only to liquid substances identified as products.

1.9 The requirements for the carriage of liquid products in bulk are defined in the IBC Code and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code). The IBC Code applies to chemical tankers built on or after 1 July 1986 and is mandatory under both SOLAS and MARPOL. The BCH Code applies to those tankers built before 1 July 1986. The latter is mandatory under MARPOL and recommended under SOLAS.

1.10 The present Guidelines make reference to the IBC Code. Reference to the BCH Code is implied, where applicable.

1.11 The procedures described in the present Guidelines are presented in flow chart form in appendix 1.

Bodies involved in the assessment process and related documentation

1.12 The process for the full assessment of liquid products offered for carriage in bulk involves a number of entities that, as a result of the assessments undertaken, produce a number of related product lists. These entities and lists, which are defined below, are referred to throughout the Guidelines.

GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)
GESAMP/EHS	GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships (EHS). An independent body of scientific experts that meets annually to assess the hazards of bulk liquid substances regulated under MARPOL Annex II and, based on the data received, assign a hazard profile for a product. This is known as the GESAMP Hazard Profile (GHP). Once evaluated, an entry for the substance and its GESAMP Hazard Profile is permanently added to the GESAMP Composite List, which is updated and circulated annually as a PPR.1 circular, following each GESAMP/EHS meeting.
GESAMP Hazard Profile	The GESAMP Hazard Profile consists of an alphanumerical rating system indicating a substance's hazards to the marine environment and human health. Ratings are applied to each of 13 end-points that represent an environmental or human health effect of a given product. These 13 ratings collectively make up the hazard profile.
GESAMP/EHS Product Data Reporting Form	This form sets out all the technical information required by GESAMP/EHS to evaluate a product and assign a GESAMP Hazard Profile. It can be accessed on the IMO website at: http://www.imo.org/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/ChemicalsReportingForms.aspx
GESAMP Reports and Studies No. 102[1]	The GESAMP Hazard Evaluation Procedure for Chemicals Carried by Ships, 2019, is used by the GESAMP/EHS Working Group for the evaluation of the hazards of chemicals (substances and mixtures) in liquid form, as governed by MARPOL Annex II and the IBC Code.
PPR	Sub-Committee on Pollution Prevention and Response
ESPH	PPR Working Group on the Evaluation of Safety and Pollution Hazards of Chemicals (ESPH). On the basis of the GESAMP Hazard Profile and

[1] Until GESAMP Reports and Studies No. 102 is published (end of 2019), the corresponding references in these Guidelines should be taken as referring to GESAMP Reports and Studies No. 64 (Revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships, 2nd Edition).

	other properties, the ESPH Working Group determines the pollution category and carriage requirements for the respective products, in accordance with MARPOL Annex II and chapter 21 of the IBC Code. These substances are then added to the product lists included in the MEPC.2/Circular, which is updated and issued annually by IMO.
Reporting country	Refers to the country that, through its Administration, undertakes the provisional assessment of a product, in accordance with the criteria set out in the present guidelines, and establishes a tripartite agreement for the product.
Receiving country	Refers to the country(ies) that will be the recipient of the product, covered by a provisional assessment and tripartite agreement.
Participating country	Refers to the country(ies) that have concurred and signed on to a tripartite agreement proposed by the reporting country. These include the flag State(s) of the vessel(s) that would be carrying the product and the recipient countries that would be receiving the product.
MEPC.2/Circular	The *Provisional Categorization of Liquid Substances in accordance with MARPOL Annex II and the IBC Code*. This circular is a compilation of products and their carriage requirements, established either under a tripartite agreement (with an expiry date) or that have been fully assessed by IMO (no expiry date). An updated list is disseminated each December by IMO, incorporating any new products assessed or any modifications made to existing products during the year. Products in list 1 of the circular that have been formally reviewed by ESPH and are valid for all countries will be incorporated into the IBC Code when the Code is next updated.
PPR.1/Circular	Source of the latest "GESAMP Composite List". The PPR.1/Circular contains a compilation of all substances assessed by GESAMP/EHS and the resulting GESAMP Hazard Profiles (GHP). GESAMP/EHS meets annually to assess substances. Following this, the PPR.1/Circular is circulated, which includes the report of the meeting and the update of the GESAMP Composite List.
PPR Product Data Reporting Form	This form sets out all the technical information required by the ESPH to assign a pollution category (in accordance with MARPOL Annex II) and carriage conditions (under the IBC Code) for liquid substances carried in bulk. The form and related guidance notes are set out in MEPC.1/Circ.857. These are also available for download at the IMO website.[2]

1.13 These Guidelines also make reference to a number of documents to be referred to when ascertaining the carriage requirements for liquid products shipped in bulk. A summary of these information sources is included in appendix 2.

[2] http://www.imo.org/en/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/ChemicalsReportingForms.aspx

2 ASSESSED PRODUCTS

2.1 "Assessed products" are those products that have been evaluated by the GESAMP/EHS and have had their carriage requirements confirmed by IMO. These are subsequently included in chapters 17, 18 or 19 of the IBC Code, or in the latest edition of the MEPC.2/Circular, for all countries with no expiry date.

2.2 A product can be still be shipped as an assessed product if it contains up to a total of 1% unassessed components, which are mixed with the assessed component(s). Such unassessed component(s) cannot be oil as defined in MARPOL Annex I or mixed with a product with pollution category "OS".

2.3 It should be noted that technically pure substances may contain impurities or by-products from processing but the name of the product would reflect the chemical name of the substance and not to any impurities or by-products present, and that this would not affect the carriage requirements in any way.

2.4 If a liquid substance is to be shipped as a product, the shipper should first check whether it is listed in chapters 17, 18 or 19 of the IBC Code, or in the latest edition of the MEPC.2/Circular.

2.5 If it appears in any of these, then the product must be shipped under the product name listed in chapter 17 or 18 of the IBC Code or the latest edition of MEPC.2/Circular.

2.6 The products listed in the IBC Code are pure or technically pure products and also include solutions and generic mixtures that have been evaluated as a whole. The product lists set out in chapters 17, 18 or 19 of the IBC Code are updated with each subsequent amendment of the lists, usually on a 4-5 year cycle.

2.7 Chapter 19 of the IBC Code, i.e. the Index of Products Carried in Bulk (later referred to as the "Index") sets out most of the commonly used synonyms of the products listed in chapters 17 and 18. The Index is also updated in each consecutive edition of the IBC Code.

2.8 If the product is not listed in chapters 17, 18 or 19 of the IBC Code, the next step is to consult list 1 of MEPC.2/Circular. List 1 of the circular contains pure or technically pure products and generic mixtures evaluated as a whole.

2.9 The MEPC.2/Circular also includes the following other lists:

.1 **List 2**: Pollutant-only mixtures containing at least 99% by weight of components already assessed by IMO (covered in section 5);

.2 **List 3**: (Trade-named) mixtures presenting safety hazards (covered in section 6);

.3 **List 4**: Pollutant-only mixtures containing one or more components, forming more than 1% by weight of the mixture, which have not yet been assessed by IMO; and

.4 **List 5:** Substances not shipped in pure form but as components in mixtures.

2.10 If the product is not listed in the IBC Code or in the MEPC.2/Circular then it is necessary to check whether the product has already been provisionally assessed under a tripartite agreement by consulting the appropriate section of the IMO website:

http://www.imo.org/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/TripartiteAgreements.aspx

This portion of the website is updated throughout the year based on receipt of notification from Member States of any new tripartite agreements established through their respective Administrations.

2.11 If a product has already been provisionally assessed and a tripartite agreement exists, any interested countries should contact the reporting country, i.e. the country that has initiated the tripartite agreement, to obtain a copy of the agreement. Such an interested country will then review the assessment and, if it agrees, will consider becoming a party to it. When carrying out this review, any new data should be taken into account, so that an accurate assessment can be made in accordance with the applicable section of these Guidelines. If an interested party is in agreement with the provisional assessment as it stands and wishes to join the tripartite agreement, it must make a request to the reporting country directly. Once this has been agreed, the inclusion of the new country in the agreement must be duly communicated to IMO by the reporting country, which will then update this information in its database (GISIS) and on the IMO website. The new information will be also reflected in the MEPC.2/Circular when next issued.

2.12 If there is no tripartite agreement for the product, one must be established, as described in section 8, in order to be able to ship the product.

3 UNASSESSED PRODUCTS

3.1 Unassessed products are those products that have not had their carriage requirements confirmed by IMO. Consequently, they would not appear in chapters 17, 18 or 19 of the IBC Code, nor in the latest edition of the MEPC.2/Circular, other than under a tripartite agreement with an expiry date.

3.2 Unassessed products are grouped as follows:

.1 pure or technically pure products and mixtures assessed as a whole; (list 1 of the MEPC.2/Circular; see section 4);

.2 pollutant-only mixtures, containing at least 99% by weight of components already assessed by IMO (list 2 of the MEPC.2/Circular; see section 5);

.3 trade-named mixtures presenting safety hazards (list 3 of the MEPC.2/Circular; see section 6); and

.4 pollutant-only mixtures containing one or more components, forming more than 1% by weight of the mixture, which have not yet been assessed by IMO (list 4 of the MEPC.2/Circular; see section 7);

.5 complex mixtures (see section 9).

3.3 The products or mixtures referred to paragraphs in 3.2.1, 3.2.3 and 3.2.4 above may be provisionally assessed under a tripartite agreement, as described in section 8, in accordance with regulation 6.3 of MARPOL Annex II.

3.4 Once the provisional assessment has been made, a tripartite agreement, as described in section 8, should be established in order to be able to ship the product.

3.5 Pollutant-only mixtures, containing at least 99% by weight of components already assessed by IMO that do not present a safety hazard, referred to in paragraph 3.2.2 above, are assessed in a more simplified manner.

3.6 Given that these products only represent a pollution hazard and virtually all the components of the mixture would have already been assessed (99%), it is possible for the reporting country to assess the product and assign carriage requirements without the concurrence of the flag States and receiving countries, as is normally required for the establishment of tripartite agreements (see section 8).

3.7 For such cases, the Administration of the reporting country will assign a pollution category and carriage requirements for the product and communicate the results of its assessment to the relevant flag State and receiving country, as well as to IMO, so that the information may be posted on the IMO website. The product entry will also be included in the MEPC.2/Circular, when next issued. These mixtures will be shipped under the applicable generic entry in the IBC Code (i.e. Noxious Liquid (n.o.s.) covered under chapter 17 or Non-Noxious Liquid (n.o.s.) covered under chapter 18), without the need for an addendum to the ship's Certificate of Fitness.

4 PROVISIONAL ASSESSMENT OF PURE OR TECHNICALLY PURE PRODUCTS, AND GENERIC MIXTURES EVALUATED AS A WHOLE

4.1 In the case of pure or technically pure products and generic mixtures assessed as a whole, the Administration of the reporting country should provisionally assess the product and assign the pollution category, the ship type and carriage requirements, in accordance with the provisions of MARPOL Annex II and the IBC Code, on the basis of the data supplied by the manufacturer/shipper, and the product's GESAMP Hazard Profile, if available.

4.2 The following reference documents provide guidance to the Administration for assessing the pollution and safety hazards of a product:

.1 Guidelines for the categorization of noxious liquid substances (MARPOL Annex II, appendix I);

.2 chapter 21 of the IBC Code, Criteria for assigning carriage requirements for products subject to the IBC Code; and

.3 GESAMP Reports and Studies No.102 – The GESAMP Hazard Evaluation Procedure for Chemicals Carried by Ships, 2019.

4.3 The first step for the Administration is to consult the latest version of the GESAMP Composite List (PPR.1/Circular).

4.4 If a GESAMP Hazard Profile exists in the GESAMP Composite List for the product in question, its pollution category can be derived following the guidelines set out in MARPOL Annex II, appendix I (see 4.2.1 above). Once the pollution category has been identified, the ship type and carriage requirements can be then derived by following the criteria set out in chapter 21 of the IBC Code (see 4.2.2 above).

4.5 If no hazard profile exists for the product, all available data needed to establish a provisional hazard profile should be provided by the manufacturer/shipper based on the parameters set out in GESAMP Reports and Studies No.102.

4.6 When adequate data are available, a provisional hazard profile can be derived, based on the criteria developed by GESAMP/EHS (see 4.2.3 above). The provisional pollution category should then be derived on the basis of the provisional hazard profile by following the guidelines referred to in 4.2.1 above. The ship type and carriage requirements should be derived in accordance with 4.2.2.

4.7 When sufficient data are not available, the Administration of the reporting country should use the information submitted by the manufacturer/shipper to make an assessment by analogy to chemically similar substances, from the following sources:

.1 the IBC Code (chapters 17, 18, 19);

.2 the latest MEPC.2/Circular, which lists the products assessed by IMO and those provisionally assessed by tripartite agreement; and

.3 the GESAMP Composite List (PPR.1/Circular), listing all substances for which hazard profiles exist.

4.8 When several alternative analogies are possible, the most severe should prevail.

4.9 Once the provisional assessment is made, a tripartite agreement, as described in section 8, should be established in order to be able to ship the product.

5 ASSESSMENT OF POLLUTANT-ONLY TRADE-NAMED MIXTURES CONTAINING PRODUCTS ALREADY ASSESSED BY IMO

5.1 This section addresses the mixtures defined in paragraph 3.2.2, i.e. pollutant-only mixtures presenting no safety hazard and containing at least 99% by weight of products (i.e. pure/technically pure products) already assessed by IMO. Products that have been assessed by IMO are:

.1 those listed in chapters 17, 18 or 19 of the IBC Code; and

.2 those listed in list 1 of the MEPC.2/Circular, without an expiry date.

5.2 Deleted.

5.3 The pollution category and the ship type for these mixtures are derived from the GESAMP Hazard Profiles of the components, using the calculation method set out in paragraphs 5.5 and 5.6. For all assessments, the GHP in the most recent edition of the GESAMP Composite list should be used.

5.4 For the purpose of this calculation, unassessed components up to 1% are to be assigned a component factor of 10,000 for pollution categorization and a component factor of 100 is to be used for assignment of ship type. A component factor of 100 is also assigned to diluent mineral oil.[3]

[3] Most lube oil additive components are produced in mineral oil and have been assessed a whole. Sometimes more mineral oil is added to a mixture to make it pumpable. This additional mineral oil is referred to as "diluent mineral oil".

Calculation of the pollution category

5.5 The first step in the assessment process is to establish the pollution category of the mixture by the following procedure:

.1 identify the GESAMP Hazard Profile of each component from the latest edition of the GESAMP Composite List (PPR.1/Circular);

.2 multiply the concentration of each identified component in the mixture, expressed in percent by weight, by the factor associated with its GESAMP Hazard Profile using table 1, taking the ratings resulting in the highest component factor into account;

.3 add the resultant multiples to obtain the "Sp" value;

i.e. Sp = Σ (Each component %wt) x (Each component factor); then

.4 refer to table 2 to determine the pollution category that corresponds to the resultant Sp value.

Table 1 – Component factors for calculation of pollution category

Row	**Rule No** (Guidelines for categorization, Appendix 1 to MARPOL Annex II)	**A1**	**A2**	**B1**	**B2**	**D3**	**E2**	**Component Factor**	**Row**
a	*1*	≥4	NR	≥6				100,000	a
b	*1*	≥4		≥6				100,000	b
c	*1*		NR	≥6				100,000	c
d	*4*	≥4	NR			CMRTNI[4]		25,000	d
e	*1*			≥6				10,000	e
f	*1*	≥4	NR	5				10,000	f
g	*1*	≥4		5				10,000	g
h	*1*		NR	5				10,000	h
i	*1*			5				1,000	i
j	*2*	≥4	NR	4				1,000	j
k	*2*	≥4		4				1,000	k
l	*3*		NR	4				1,000	l
m	*5*			4				100	m
n	*11*					CMRTNI		25	n
o	*6*			3				10	o
p	*7*			2				1	p
q	*8*	≥4	NR		Not 0			1	q
r	*9*				≥1			1	r
s	*10*						Fp, F or S if not Inorganic	1	s
t	*12*	Any product not meeting the criteria of rules 1 to 11 and 13						0	t
u	*13*	Any OS substance						0	u

[4] Column D3 refers to products with long-term health effects as follows: C (carcinogenic), M (mutagenic), R (reprotoxic), T (specific target organ toxicity), N (neurotoxic) or I (immunotoxic).

Table 2 – Determination of pollution category based on Sp value

Sp Value	Pollution category
Sp ≥ 25,000	X
Sp < 25,000 and Sp ≥ 25	Y
Sp < 25 unless all individual components are OS	Z
a mixture where all individual components are OS	OS

Calculation of ship type

5.6 The next step is to establish the ship type for the mixture as follows:

.1 identify the ship type for each component from the IBC Code (chapters 17 or 18) or the MEPC.2/Circular, as appropriate;

.2 multiply the concentration of each component in the mixture, expressed in percent by weight, by the factor associated with its ship type according to the table 3;

Table 3 – Component factors for calculation of ship type

Ship type	Factor
1	1,000
2	100
3	10
NA	0
diluent mineral oil	10

.3 add the resultant multiples to obtain the "Ss" value;

i.e. Ss = Σ (Each component %wt) x (Each component factor);

.4 refer to the left-hand column of table 4 for determining ship types and identify the row that corresponds to calculated "Ss" value; and

.5 refer to table 4 below to determine the ship type that corresponds to the resultant Ss value in the left-hand column and then, reading across the row, answer the questions to determine the ship type.

Table 4 – Determination of ship types based on Ss value

Ss Value	Question	Answer	Ship Type
Ss ≥ 10,000	Is the sum of ST 1 multiples ≥ 10,000?	Yes →	1
		No →	2
10,000 > Ss ≥1,000	Is the sum of ST 1 & 2 multiples ≥1,000?	Yes →	2
		No →	3
1,000 > Ss ≥100			3
Ss <100	Is the pollution category of the mixture X or Y?	Yes →	3
		N →	NA

5.7 Examples of the calculations for determining the pollution category are given in appendix 4 and examples for calculating the ship type for mixtures are given in appendix 5. In addition, an automated tool, with accompanying guidance notes, has also been developed

to assist Administrations in undertaking the above calculations, which are known as "mixture calculations" for trade-named mixtures. This tool can be accessed on the IMO website at:

http://www.imo.org/en/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/ChemicalsReportingForms.aspx

5.8 On the basis of the calculated pollution category and ship type, and taking into account its flashpoint, a mixture is then assigned to the appropriate generic "Noxious (or non-noxious) liquid, n.o.s." entry in the IBC Code with the assignment of the corresponding carriage requirements.

5.9 A pollutant-only mixture is identified by reference to the appropriate generic n.o.s. entry in the IBC Code, completed by the identification of a trade name and of the component responsible for the assigned pollution category. Trade names should be of a commercial nature and should not contain anything that could be construed as a chemical name, chemical formula, or other generally accepted chemical descriptor.

5.10 If the mixture contains diluent mineral oil, which could contribute the assignment of the pollution category, the n.o.s. designation of the mixture should be followed by the words "contains mineral oil".

5.11 The process of assigning a pollutant-only mixture of assessed components to one of the generic n.o.s. entries in the IBC Code is of a purely mathematical nature and does not require an assessment. In the interest of facilitating shipments, the Administration of the reporting country may authorize the manufacturer to carry out the assignment on its behalf.

5.12 In such a case, the obligation to inform the flag States and the receiving countries of the product assignment falls on the delegated manufacturer. The manufacturer should also inform IMO, if so requested by the authorizing Administration. Notification of the assignment by the manufacturer should be accompanied by an authorization letter indicating that the manufacturer is acting under instruction and on behalf of the Administration. Following notification to IMO, the mixture will be added to the list of products on the IMO website and in list 2 of the MEPC.2/Circular, when next issued.

5.13 The manufacturer should also inform the authorizing Administration of the assignment performed. Upon request, the manufacturer should also provide the flag State and/or the receiving country with details of the mixture assignment.

6 ASSESSMENT OF TRADE-NAMED MIXTURES PRESENTING SAFETY HAZARDS CONTAINING PRODUCTS THAT HAVE ALREADY BEEN ASSESSED BY IMO

6.1 This section addresses those mixtures presenting a safety hazard, i.e. one or more of the components designated an "S" or "S/P" in *column d* of chapter 17 of the IBC Code or of the MEPC.2/Circular, containing at least 99% by weight of products already assessed by IMO.

6.2 For the purpose of this section, products that have been assessed by IMO are:

.1 those listed in chapters 17, 18 and 19 of the IBC Code; and

.2 those listed in list 1 of the MEPC.2/Circular, without an expiry date.

6.3 Similar to the procedure set out in section 5, the first step for the Administration of the reporting country is to calculate the pollution category and ship type for the mixture, following the method set out in paragraphs 5.5 and 5.6.

6.4 The Administration should then assess the safety hazards of the mixture and assign carriage requirements. The minimum carriage requirements of each column in the Code is determined by selecting the most stringent requirement of the components present in the mixture. However, if the PPR Data Reporting Form contains data on the mixture as a whole for certain safety criteria, the carriage requirements can be assigned accordingly. The Administration should also determine the ship type based on the criteria in paragraph 21.4.5.2 of the IBC Code and, if it is more stringent than that in paragraph 6.3, assign the more stringent ship type.

6.5 Trade-named mixtures presenting safety hazards cannot be shipped under any of the generic n.o.s. entries in the IBC Code. A shipping name must therefore be assigned and will be composed of:

.1 the trade name, followed by;

.2 an identification, in parentheses, of the principal substance(s) responsible for the safety and/or pollution hazards of the mixture. This is what is known as the "contains name" of the product.

6.6 Assigned trade names for such mixtures should be of a commercial nature and should not contain anything that could be construed as a chemical name, chemical formula or other generally accepted chemical descriptor. Products submitted for assessment by IMO may be rejected or require renaming if chemical descriptors, as identified above, are included as part of the trade name. The contains name for the mixture should be the corresponding product name, as set out in chapter 17 of the IBC Code or list 1 of the MEPC.2/Circular.

6.7 The contains name of a trade-named mixture may be a single product or two different products. The selected contains name(s) should correspond to a product name(s) set out in chapter 17 of the IBC Code or list 1 of the MEPC.2/Circular. Where a trade-named mixture contains both pollution and safety hazards, the product representing the safety hazard should be listed first in the contains name, followed by the product representing the pollution hazard, unless they are one and the same. If the mixture contains diluent mineral oil, which could contribute the assignment of the pollution category, this should also be indicated in the contains name, following the product name(s) as follows: "contains mineral oil".

Mixtures assessed as a whole

6.8 Mixtures with a generic technical name presenting safety hazards assessed as a whole should be assigned to list 1 of the MEPC.2/Circular.

6.9 Once a provisional assessment is made, a tripartite agreement, as described in section 8, should be established in order to be able to ship the product.

7 ASSESSMENT OF MIXTURES CONTAINING ONE OR MORE COMPONENTS WHICH HAVE NOT YET BEEN ASSESSED BY IMO

7.1 This section addresses mixtures containing one or more components, forming more than 1% by weight of the mixture, that have not yet been assessed by IMO. Given that these components have not been assessed, they would not be listed in chapters 17, 18 or 19 of the IBC Code, nor in the MEPC.2/Circular.

7.2 There are two possible ways of assessing such mixtures:

.1 if sufficient data are available for the mixture as a whole, it should be assessed as if it were a pure or technically pure product, in accordance with section 4;

.2 if sufficient data for the mixture as a whole are not available, the Administration of the reporting country should:

.1 provisionally assess each unassessed component, in accordance with section 4; and then

.2 assess the mixture by calculation, as shown in section 5, for a pollutant-only mixture, and section 6, for trade-named mixtures presenting safety hazards.

Mixtures presenting only pollution hazards

7.3 Following a provisional assessment of the mixture presenting only pollution hazards, the reporting country may initiate a tripartite agreement, as described in section 8. These mixtures will be shipped under the applicable generic entry in the IBC Code (i.e. noxious liquid (n.o.s.) or non-noxious liquid (n.o.s.)), without the need for an addendum to the ship's Certificate of Fitness.

7.4 Once the tripartite agreement has been communicated to IMO, the details of the assessment will be included on the IMO website and in list 4 in the next edition of the MEPC.2/Circular.

7.5 As described in paragraph 7.2, the manufacturer has the option of forwarding the available data on the whole mixture to GESAMP/EHS, in the case of 7.2.1, or on each individual unassessed component, in the case of 7.2.2, in order to establish the respective GESAMP Hazard Profiles. This should be done following the procedure set out in section 10.

Mixtures presenting safety hazards

7.6 When an unassessed component presents safety hazards, the Administration of the reporting country should follow the procedure set out in section 4, as if the component is to be shipped as a pure or a technically pure product.

7.7 Once the provisional assessment has been made for a component as described in 7.6 above, the procedure set out in section 6 should be followed.

7.8 Further to the provisional assessment, the reporting country should initiate a tripartite agreement, as described in section 8, in order to be able to ship the product.

7.9 Provisionally assessed trade-named mixtures presenting safety hazards will be included in the list 3 of the MEPC.2/Circular, and mixtures with a generic technical name will be included in the list 1 of the MEPC.2/Circular, both with an expiry date of three years.

7.10 The manufacturer will forward the available data on the mixture as a whole to GESAMP/EHS, in the case of 7.2.1, or on each individual unassessed component in the case of 7.2.2, in order to assign the respective GESAMP Hazard Profiles. This should be done following the procedure set out in section 10.

7.11 When information on the mixture or on all of the components is available, the product should be reviewed and a submission made to IMO to reassign it to the appropriate list in the MEPC.2/Circular, as an entry for all countries without an expiry date.

8 ESTABLISHING TRIPARTITE AGREEMENTS AND RELATED ADMINISTRATIVE REQUIREMENTS

Tripartite agreements

8.1 In order to be able to ship a product which has been provisionally assessed, but has not yet been fully assessed by IMO, the reporting country must establish a tripartite agreement.

8.2 Provisional assessments by tripartite agreement will expire three years after their first publication in the MEPC.2/Circular. It is intended that this three-year period would allow sufficient time for the product (and/or its components, as appropriate) to be fully assessed by both the GESAMP/EHS and IMO (see section 9) and subsequently included in the MEPC.2/Circular, with validity for all countries and with no expiry date.

8.3 It is critical that this is done within the specified period as, once a tripartite agreement has expired, no new tripartite agreement may be established for the same product, even under a different name. As a consequence, the product can no longer be carried until it has been fully assessed and included in either the MEPC.2/Circular, as an entry for all countries without an expiry date.

8.4 It is in the best interest of the manufacturer or shipper to submit the necessary data for a provisional assessment by tripartite agreement to the Administration of the reporting country well in advance of a planned shipment. The Administration should avoid unnecessary delays in initiating the tripartite agreement, after receiving the complete set of information.

8.5 When the provisional assessment of products that present safety hazards is completed, an addendum to the ship's Certificate of Fitness must be issued by the Administration of the flag State of the ship, before the product is loaded on board. An example of an addendum is given in appendix 3.

8.6 Until the provisional assessment is fully agreed by the countries involved and a tripartite agreement has been established, the product(s) shall not be carried.

Administrative aspects of establishing a tripartite agreement

8.7 To initiate a tripartite agreement, the Administration of the reporting country should seek the concurrence of the Administrations of the flag State(s) and receiving countries for the provisional assessment, by providing information on which the provisional pollution and safety hazard assessments have been based. For this purpose, the standard format for proposing tripartite agreements for the provisional assessment of liquid substances should be used; as set out in appendix 6. Contact details for tripartite agreements are published in annex 8 of the latest MEPC.2/Circular and can also be accessed at any time on the GISIS web portal of the IMO website.[5]

8.8 Once a provisional assessment for the establishment of a tripartite agreement has been received by a flag State or receiving country, Administrations are expected to respond within 14 days.

[5] https://gisis.imo.org/Public/CP/Browse.aspx?List=BCCP

8.9 In the absence of an interim or final response to the proposal for a tripartite agreement from any of the parties within this 14-day period, the provisional assessment proposed by the Administration of the reporting country is deemed to have been accepted.

8.10 Those contact points that have not informed the Organization of their latest contact details are also deemed to have accepted the tripartite agreement, whilst other contact points should still follow regulation 6.3 of Annex II of MARPOL and these Guidelines.

8.11 In the event of disagreement, the most severe of the conditions proposed should prevail for the purposes of the tripartite agreement.

8.12 Following express or tacit agreement by the parties, the Administration of the reporting country should inform IMO of the tripartite agreement, with details of the provisional assessment within 30 days (or ideally as soon as possible), as required by regulation 6.3 of MARPOL Annex II.

8.13 Following the establishment of the tripartite agreement, it is the responsibility of the manufacturer to submit the product (pure or technically pure substance; or the unassessed component(s) of a mixture; or the mixture as whole), with all required technical data, to GESAMP/EHS for assignment of a GESAMP Hazard Profile well in advance of the expiry date of the tripartite agreement as stated in the latest MEPC.2/Circular. The process for submitting products for evaluation by GESAMP/EHS is set out in section 10.

9 COMPLEX MIXTURES SUBMITTED FOR ASSESSMENT AS A MARPOL ANNEX II PRODUCT

9.1 This section addresses complex mixtures submitted to IMO for consideration as a MARPOL Annex II product and the criteria that will be applied to determine whether such products should be classified under MARPOL Annex I or MARPOL Annex II.

9.2 A complex mixture is considered to be an Annex I cargo if all of the following criteria apply:

.1 the product is a petrochemical complex mixture not produced by chemical synthesis; and

.2 the product is obtained by refining (elimination of impurities) or distillation of either crude oils or their blend-stocks or de-aromatization; and

.3 the composition of the product can be described as a mixture of hydrocarbon classes of chemicals, including alkanes with straight or branched-chain, cycloalkanes and aromatics (e.g. naphthalene) etc.; and

.4 the composition incorporates a number of different chemical structure types and the composition is a complex petrochemical mixture that may vary from batch to batch depending on the origin of the crude oil feed stock, and could be characterized as a UVCB[6] substance.

[6] Substances of unknown or variable composition, complex reaction products or biological material (OECD Guidance on Grouping of Chemicals, Second Edition, Series on Testing & Assessment, No.194, 2017).

9.3 In addition, Gas to Liquids (GTL) oils, as referenced in the *Requirements for the carriage of Gas to Liquids oils* (BLG.1/Circ.23), and Shale oils[7] are considered as MARPOL Annex I cargoes.

10 SUBMISSION OF DATA TO GESAMP/EHS AND IMO

10.1 Following the establishment of a tripartite agreement for a pure or technically pure product or of a mixture containing more than 1% by weight of unassessed components, the manufacturer should take the necessary steps to ensure that their product, or the product components (for mixtures), is duly assessed by GESAMP/EHS and assigned a hazard profile(s), within the specified timeframe, i.e. prior to expiry of the tripartite agreement.

10.2 The first step in this process is to complete the GESAMP/EHS Product Data Reporting form and to submit the form, together with the required technical information, to the attention of the GESAMP Secretariat, for assessment by GESAMP/EHS. Product submissions should follow the guidance as given in GESAMP Reports and Studies No.102 with respect to the technical information to be supplied. The required form may be downloaded at:

http://www.imo.org/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/ChemicalsReportingForms.aspx

10.3 Assessments undertaken by GESAMP/EHS are charged at a fixed rate per assessment, i.e. per product or component (for mixtures) assessed[8].

10.4 Once a GESAMP Hazard Profile for a substance or components of a mixture has been assigned, the manufacturer shall then submit to the Administration of the reporting country a completed PPR Product Data Reporting Form, using the required information from the GESAMP Hazard Profile and other technical data, as may be required. The proposal should include the proposed pollution category and ship type and associated carriage requirements. The PPR Data Reporting Form is available for download at the link shown in paragraph 10.2.

10.5 The Administration of the reporting country should then submit a proposal to IMO (either PPR or ESPH), for inclusion of the product in the MEPC.2/Circular as an entry for all countries, without an expiry date. This should comprise a covering note, in the appropriate IMO document format, and a completed PPR Data Reporting form (see MEPC.1/Circ.857).

[7] Refer to the report of BLG 14 to the Maritime Safety Committee and the Marine Environment Protection Committee (BLG 14/17), paragraph 3.14.1.

[8] Refer to *The introduction of charges for product evaluation work undertaken by GESAMP/EHS* (BLG.1/Circ.28).

APPENDIX 1

FLOW DIAGRAMS FOR THE PROVISIONAL ASSESSMENT OF LIQUID SUBSTANCES CARRIED IN BULK

The following flow diagrams have been developed to assist users in conducting a provisional assessment of a liquid substance to be carried in bulk in accordance with MARPOL Annex II and the IBC Code. The diagrams follow sequentially and reference each other as appropriate.

Diagram 1 – Determining whether a liquid substance to be carried in bulk is subject to the requirements of the IBC Code

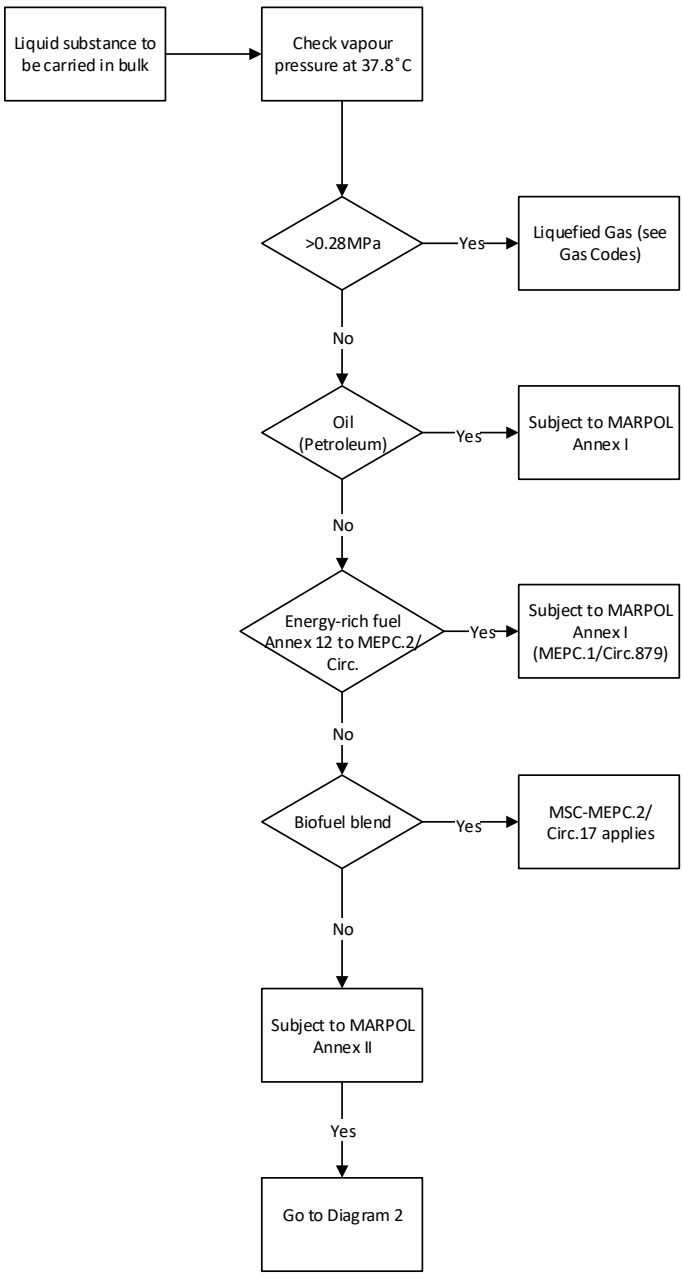


Diagram 2 – Provisional assessment of pure or technically pure products, and generic mixtures evaluated as a whole (List 1 and IBC Code chapters 17, 18 and 19 products)

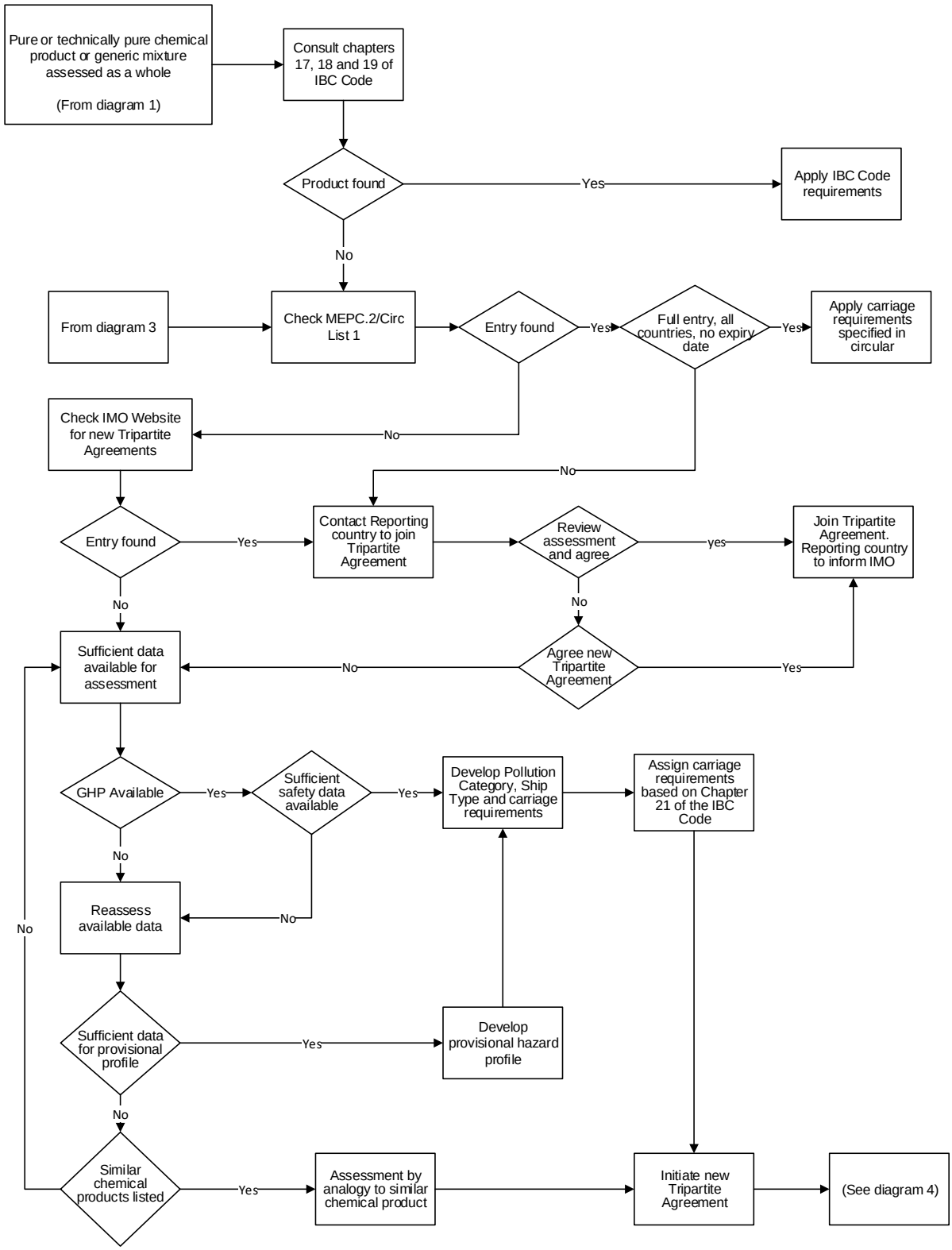


Diagram 3 – Provisional assessment of trade-named mixtures (List 2, 3 and 4 products)

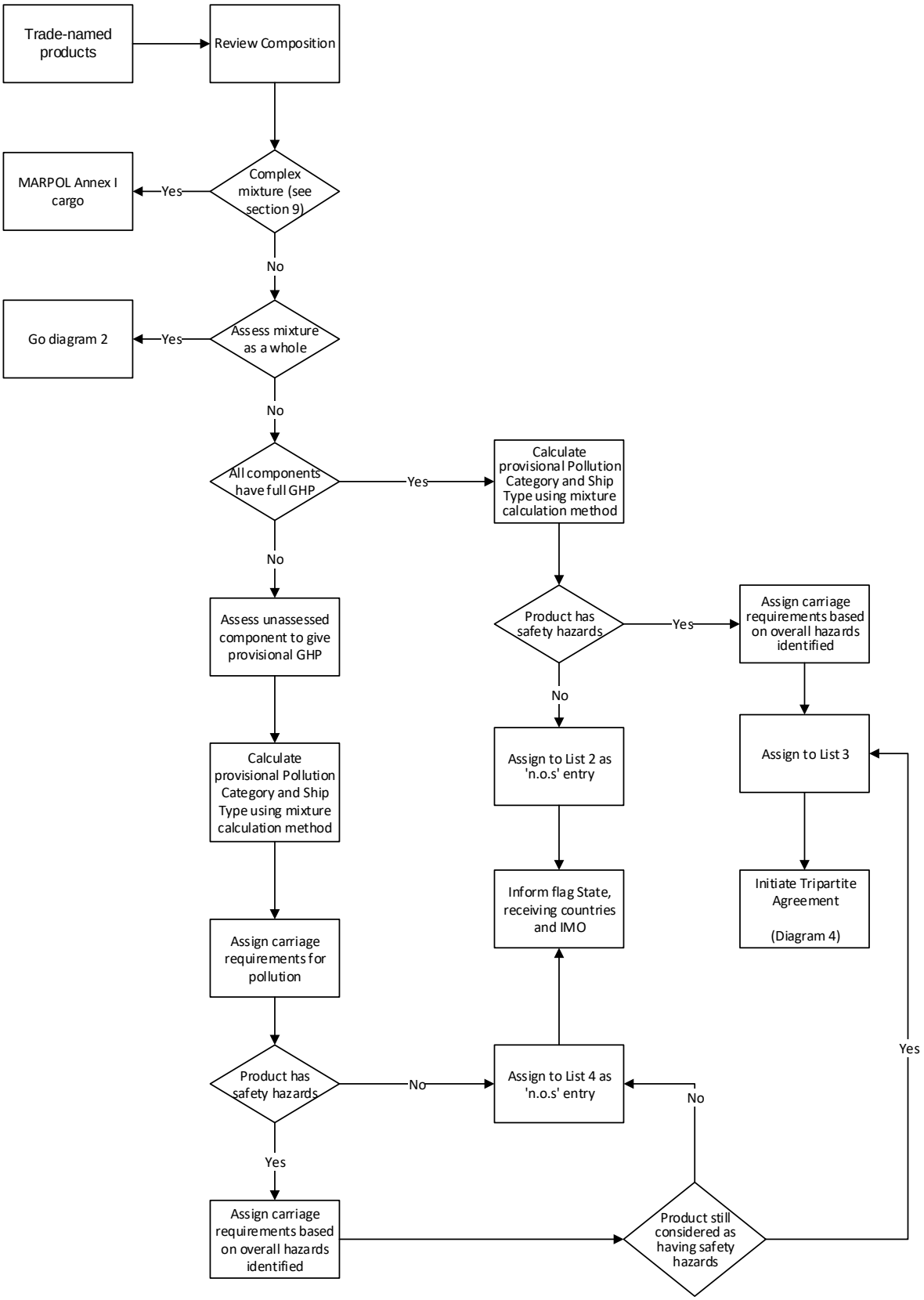
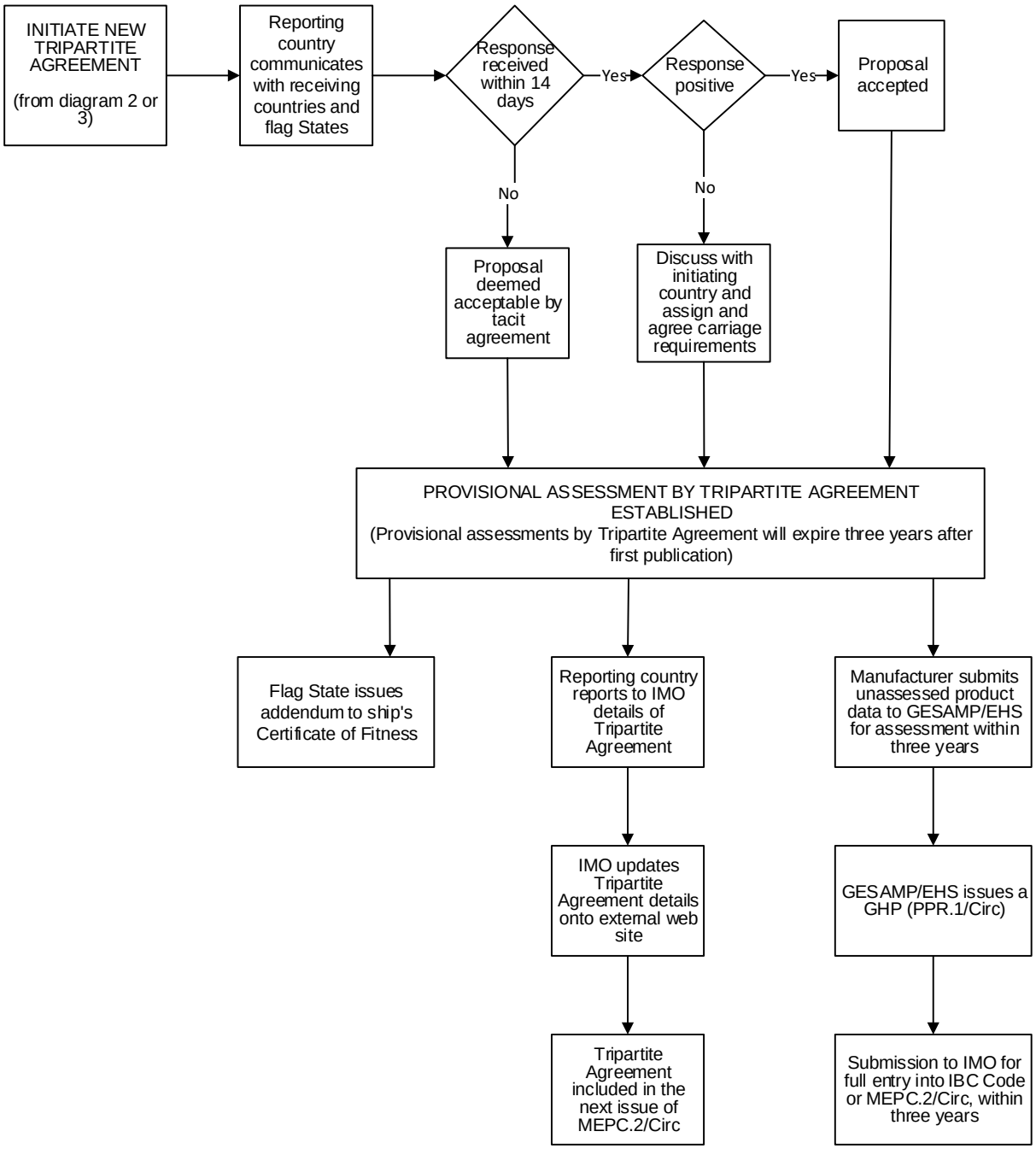


Diagram 4 – Establishing a Tripartite Agreement for a product



APPENDIX 2

REFERENCES TO RELATED INFORMATION AND RECOMMENDATIONS FOR ASCERTAINING THE CARRIAGE REQUIREMENTS FOR PRODUCTS SHIPPED IN BULK

Information requirement	Reference to relevant documents	Subject	Remarks
Information for assessed or provisionally assessed products	IBC Code, chapters 17, 18, 19	Chapters 17, 18: Identification of assessed products Chapter 19: Index of products carried in bulk (synonyms of products listed in the IBC Code)	MEPC.1/Circ.512/Rev.1 section 2
	MEPC.2/Circular, list 1 (issued in December of each year)	Provisional categorization of liquid substances in accordance with MARPOL Annex II and the IBC Code (potential entries to the IBC Code)	Check latest MEPC.2/Circular
	Tripartite Agreement Information (BLG.1/Circ.27)	Substances already shipped under Tripartite Agreement arising since the last MEPC.2/Circular	Check IMO website[9] for current list
Information for provisional assessment	MARPOL Annex II, appendix I	Guidelines for the categorization of noxious liquid substances	Use for the assignment of pollution category
	IBC Code, chapter 21	Chapter 21: Criteria for assigning carriage requirements for products subject to the IBC Code	See also MARPOL, Annex II, appendix I to identify endpoint ranges from GESAMP hazard profiles
	MEPC.1/Circ.512/Rev.1	Guidelines for the provisional assessment of liquid substances transported in bulk	Refer to relevant section, flowcharts and examples in appendix
	GESAMP/EHS Working Group Report (PPR.1/Circular)	Hazard evaluation of substances transported by ships and GESAMP hazard profiles	Contains latest GESAMP Composite List with full listing of GESAMP hazard profiles
	PPR.1/Circ.7	Decisions with regard to the categorization and classification of products	Interpretation of the ratings of GESAMP hazard profiles
	BLG.1/Circ.23 and MEPC.1/Circ.639	Gas to Liquids (GTL) oils	

[9] http://www.imo.org/en/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/ChemicalsReportingForms.aspx

Information requirement	Reference to relevant documents	Subject	Remarks
Information for proposing tripartite agreements	MEPC.1/Circ.512/Rev.1, section 8	Guidelines for the provisional assessment of liquid substances transported in bulk	Section 8 contains process and format for proposing tripartite agreements
	MEPC.2/Circular, annex 8	Tripartite contact details	Contact points also available from GISIS website[10]
Information for submission of data to GESAMP/EHS for hazard evaluation	GESAMP Reports and Studies No.102	Revised GESAMP hazard evaluation procedure for chemical substances carried by ships GESAMP/EHS Product Data Reporting Form	Download from website[11] Download from IMO website[12]
	BLG.1/Circ.28	Introduction of charges for product evaluation work undertaken by GESAMP/EHS	Sets out evaluation fees for submission of products to GESAMP/EHS
Submission to IMO (for MEPC.2/Circ. and IBC Code)	MEPC.1/Circ.512/Rev.1 section 10, appendix 4	PPR Product Data Reporting Form	Download from IMO website[13]

10 http://gisis.imo.org

11 www.gesamp.org/publications

12 http://www.imo.org/en/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/ChemicalsReportingForms.aspx

13 http://www.imo.org/en/OurWork/Environment/PollutionPrevention/ChemicalPollution/Pages/TripartiteAgreements.aspx

APPENDIX 3

EXAMPLE OF AN ADDENDUM TO THE SHIP'S CERTIFICATE OF FITNESS

(Also known as International Certificate of Fitness/International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk)

Addendum to Certificate No.:			Issued at: dd/mm/yyyy		
Issued in pursuance of the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk/International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk/Annex II to MARPOL, as amended* under the authority of the Government of: ……					
Name of Ship	Distinctive Number or Letters	IMO Number	Port of Registry	Gross Tonnage	Ship Type

THIS IS TO CERTIFY:
That the ship meets the requirements for the carriage in bulk of the following product(s), provided that all relevant operational provisions of/the Code and/Annex II of MARPOL are observed*:

Noxious Liquid Substance/Product*	Conditions of carriage (tank numbers, etc.)	Pollution category

The transportation of this product is permitted between the following countries:

The issuance of this Addendum is based on document:

The Tripartite Agreement for this product is valid until: (dd/mm/yyyy)……..

This Addendum will remain in force until: (dd/mm/yyyy)…….

Place and date of issue:
(dd/mm/yyyy)……

Signed…….
(signature of authorized official)

* Delete as appropriate.

APPENDIX 4

EXAMPLES OF DETERMINATION OF POLLUTION CATEGORIES FOR MIXTURES

This section presents a number of examples to illustrate how pollution categories are derived for mixtures, based on the procedures identified in this document. Please note that only parts GESAMP hazard profiles have been presented for the purposes of the examples. It should, however, be noted that a value for each rating would normally be included in a complete GESAMP hazard profile.

Methodology

Step 1 Determine for each component the applicable row in table 1, by means of its hazard profile, taken from the GESAMP Composite list. This will determine the component factor. Test the rows in descending order and find the first combination of ratings that is consistent with the GESAMP hazard profile.

Step 2 Multiply the component factor with the percentage of the component in the mixture. This will result in the value Sp.

Step 3 Add all resultant Sp values and determine the pollution category.

Example 1

Steps 1 and 2

The amount of component 1 in the mixture is 11%. Its GESAMP hazard profile (GHP), taken from the GESAMP Composite list is:

A1	A2	B1	B2	D3	E2
4	NR	6			

The next step is to consult table 1. The GHP corresponds to *row a* in table 1.

The component factor is 100,000. The multiple is therefore 1,100,000.
(i.e. 11 % by wt x 100,000 = 1,100,000)

The amount of component 2 is 67% of the mixture. Its GESAMP hazard profile, taken from the GESAMP Composite list is:

A1	A2	B1	B2	D3	E2
4	NR	1	1		

The GHP corresponds to *row q* in table 1. The component factor is 1; the multiple is 67.

The amount of component 3 in the mixture is 22%. Its GESAMP hazard profile, taken from the GESAMP Composite list is:

A1		A2	B1	B2	D3	E2
		R	3			

This GHP corresponds to *row o* in table 1. The component factor is 10; the multiple is 220.

Step 3

Component number	**Applicable Row Table 1**	**Component Factor (Cp)**	**% in mixture**	**Multiple (Cp x %)**
1	a	100,000	11	1,100,000
2	q	1	67	67
3	o	10	22	220
Sp				**1,100,287**

Sp = multiple 1 + multiple 2 + multiple 3 = 1,100,287

Referring to table 2, identify the row corresponding to the calculated Sp value.

The Sp $\geq$ 25,000, the mixture is therefore **Pollution Category X.**

Example 2

Steps 1 and 2

The amount of component 1 is 11% of the mixture, its GESAMP hazard profile, taken from the GESAMP/EHS Composite list is:

A1	**A2**	**B1**	**B2**	**D3**	**E2**
		5		C	

The GHP corresponds to *row i* in table 1. The component factor is therefore 1,000 and the multiple is 11,000.

The amount of component 2 is 67 % of the mixture, its GESAMP hazard profile, taken from the GESAMP/EHS Composite list is:

A1	**A2**	**B1**	**B2**	**D3**	**E2**
4	NR		1		

This GHP corresponds to *row q* in table 1. The corresponding component factor is 1 and the multiple is 67.

The amount of component 3 is 22% of the mixture, its GESAMP hazard profile, taken from the GESAMP/EHS Composite list is:

A1	**A2**	**B1**	**B2**	**D3**	**E2**
		3			

This corresponds to *row o* in table 1. The corresponding component factor is 10 and the multiple is 220.

Step 3

Component number	Applicable Row Table 1	Component Factor (Cp)	% in mixture	Multiple (Cp x %)
1	i	1,000	11	11,000
2	q	1	67	67
3	o	10	22	220
Sp				**11,287**

Sp = 11,287

Referring to table 2, Sp < 25,000 and Sp ≥ 25, the mixture is therefore **pollution category Y.**

Example 3

Steps 1 and 2

The amount of component 1 is 2% of the mixture, its GESAMP Hazard profile, taken from the GESAMP Composite list is:

A1	A2	B1	B2	D3	E2
		3			

The GHP corresponds to *row o* in table 1. The component factor is 10; the multiple is 20.

The amount of component 2 is 4% of the mixture, its GESAMP Hazard profile, taken from the GESAMP Composite list is completely blank.

A1	A2	B1	B2	D3	E2
4	NR		1		

The GHP corresponds to *row q* in table 1. The component factor is 1; the multiple is 4.

The amount of component 3 is 94% of the mixture, its GESAMP Hazard profile, taken from the GESAMP Composite list is completely blank.

A1	A2	B1	B2	D3	E2

The GHP corresponds to *row u* in table 1. The component factor is 0; the multiple is 0.

All components are OS, which corresponds to row u in table 1. The component factors and multiples are both 0.

Step 3

Component number	Applicable Row Table 1	Component Factor (Cp)	% in mixture	Multiple (Cp x %)
1	o	10	2	20
2	q	1	4	4
3	u	0	94	0
Sp				**24**

Sp = 24

Referring to table 2, Sp < 25 and not all components are OS therefore **pollution category Y.**

Example 4

Steps 1 and 2

The amount of component 1 is 20% of the mixture, its GESAMP Hazard profile, taken from the GESAMP Composite list is completely blank or zero.

A1	A2	B1	B2	D3	E2
		0			

Component 2 is 80% of the mixture, its GESAMP Hazard profile, taken from the GESAMP Composite list is completely blank.

A1	A2	B1	B2	D3	E2

All components are OS, which corresponds to *row u* in table 1. The component factors and multiples are both 0.

Step 3

Component number	Applicable Row Table 1	Component Factor (Cp)	% in mixture	Multiple (Cp x %)
1	u	0	20	0
2	u	0	80	0
Sp				**0**

Sp = 0

Referring to table 2, a mixture where all individual components are OS, therefore **the mixture is OS.**

Example 5

Steps 1 and 2

The amount of component 1 is 70% of the mixture, its GESAMP hazard profile, taken from the GESAMP Composite list is:

A1	A2	B1	B2	D3	E2
		4			

This corresponds to *row m* in table 1. The component factor is 100 and the multiple is 7,000.

The amount of component 2 is 29% of the mixture.
It is a diluent mineral oil so there is *no applicable row* in table 1.
The component factor assigned to diluent mineral oil is 100 (see paragraph 5.4) and the multiple is 2,900.

The amount of component 3 is 1% of the mixture.
It is an unassessed component, so there is no applicable row in table 1.
Given the component is 1% of the mixture, the component factor is 10,000 (see paragraph 5.4) and the multiple is therefore 10,000.

Step 3

Component number	Applicable Row Table 1	Component Factor (Cp)	% in mixture	Multiple (Cp x %)
1	m	100	70	7000
2	Component is diluent mineral oil	100	29	2,900
3	Unassessed component	10,000	1	10,000
Sp				**19,900**

Sp = 19,900

Referring to table 2, Sp < 25,000 and Sp ≥ 25. The mixture is therefore **pollution category Y.**

Example 6

Steps 1 and 2

The amount of component 1 is 2% of the mixture, its GESAMP Hazard profile, taken from the GESAMP Composite list is:

A1	A2	B1	B2	D3	E2
5	NR			M	

This corresponds to *row d* in table 1. The component factor is 25,000 and the multiple is 50,000.

Component 2 is 98 % of the mixture, its GESAMP Hazard profile, taken from the GESAMP Composite list is:

A1	A2	B1	B2	D3	E2
			≥ 1		

This corresponds to *row r* in table 1. The component factor is 1 and the multiple is 98.

Step 3

Component number	Applicable Row Table 1	Component Factor (Cp)	% in mixture	Multiple (Cp x %)
1	d	25,000	2	50,000
2	r	1	98	98
Sp				**50,098**

Sp = 50,098

Referring to table 2, the Sp ≥ 25,000, the mixture is therefore **pollution category X.**

APPENDIX 5

EXAMPLES FOR THE DETERMINATION OF SHIP TYPES FOR MIXTURES

Methodology

Step 1 Identify ship type and the multiplication factor for each component using the IBC Code, the MEPC.2/Circular or the GESAMP Hazard Profiles, and table 3 of this circular;

Step 2 Determine the concentration of each component and multiply the percentage by the factor identified in step 1;

Step 3 Add multiples together and determine the resulting ship type, using table 4 of this circular; and

Step 4 Apply the previously determined pollution category of the mixture if the sum of the multiples are < 100. If they are > 100, no further action is required.

Example 1

Step 1

Component 1 is ship type 1, the multiplication factor is 1,000.
Component 2 is ship type 3, the multiplication factor is 10.
Component 3 is ship type 3, the multiplication factor is 10.

Step 2

Component 1 is 11% of the mixture. The multiple is 11,000.
Component 2 is 40 % of the mixture. The multiple is 400.
Component 3 is 49% of the mixture. The multiple is 490.

Step 3

Component number	**Ship type**	**Factor (f)**	**% in mixture**	**Multiples (f x %)**	**Pollution category of mixture**	**Resultant ship type**
1	1	1,000	11	11,000	Step 4 Not applicable (Ss >100)	**1**
2	3	10	40	400		
3	3	10	49	490		
Ss				**11,890**		

Ss = multiple 1 + multiple 2 + multiple 3 = 11890
Referring to column 1 of table 4, Ss ≥ 10,000

In response to the associated question in column 2 of table 4 (reading across the row), the sum of the ST 1 multiples is 11,000, i.e. ≥ 10,000, therefore the **ship type is 1**.

Example 2

Step 1

Component 1 is ship type 2 and the multiplication factor is 100.
Component 2 is ship type 3 and the multiplication factor is 10.

Step 2

Component 1 is 5% of the mixture. The multiple is 500.
Component 2 is 95% of the mixture. The multiple is 950.

Step 3

Ss = ∑ multiples = 1450
Referring to column 1 of table 4, 10,000 > Ss ≥ 1,000.

In response to the associated question in column 2 of table 4 (reading across the row), the sum of the ST 1 & 2 multiples is 500, i.e. not ≥ 1,000, therefore the **ship type is 3**. This is because there is no ST 1 value component in the mixture in this case and therefore the sum of ST 1 (0) + ST 2 (500) multiples = 500.

Component number	**Ship type**	**Factor (f)**	**%**	**Multiples (f x %)**	**Pollution category of mixture**	**Resultant ship type**
1	2	100	5	500	Step 4 Not applicable (Ss >100)	**3**
2	3	10	95	950		
Ss				**1,450**		

Example 3

Step 1

Component 1 is ship type "n/a", the multiplication factor is 0.
Component 2 is ship type 3, the multiplication factor is 10.
Component 3 is diluent mineral oil, the multiplication factor is 10.

Step 2

Component 1 is 10% of the mixture. The multiple is 0.
Component 2 is 8% of the mixture. The multiple is 80.
Component 3 is 82% of the mixture. The multiple is 820.

Step 3

Component number	**Ship type**	**Factor (f)**	**%**	**Multiples (f x %)**	**Pollution category of mixture**	**Resultant ship type**
1	n/a	0	10	0	Step 4 Not applicable (Ss >100)	**3**
2	3	10	8	80		
3	Diluent mineral oil	10	82	820		
Ss				**900**		

Ss = 900
Referring to column 1 of table 4, 1,000 >Ss ≥ 100.
Since there is no associated question in column 2 of table 4, the **ship type is 3**.

Example 4
Step 1

Component 1 is Ship type 2, the multiplication factor is 1,000
Component 2 is Ship type 3, the multiplication factor is 10
Component 3 is unassessed; the multiplication factor is 100

Step 2

Component 1 is 4% of the mixture. The multiple is 400.
Component 2 is 95 % of the mixture. The multiple is 950.
Component 3 is 1 % of the mixture. The multiple is 100.

Step 3

Component number	**Ship type**	**Factor (f)**	**% in mixture**	**Multiples (f x %)**	**Pollution category of mixture**	**Resultant ship type**
1	2	100	4	400	Step 4 Not applicable (Ss >100)	**3**
2	3	10	95	950		
3	Unassessed	100	1	100		
Ss				**1,450**		

Ss = multiple 1 + multiple 2 + multiple 3 = 1,450
Referring to column 1 of table 4, Ss >1,000

In response to the associated question in column 2 of table 4 (reading across the row), the sum of the ST 1 & 2 multiples is 400, i.e. < 1,000, therefore the **ship type is 3**.

Example 5

Step 1

Component 1 is ship type "n/a", the multiplication factor is 0.
Component 2 is ship type 3, the multiplication factor is 10.
Component 3 is ship type 3, the multiplication factor is 10.

Step 2

Component 1 is 91% of the mixture. The multiple is 0.
Component 2 is 7% of the mixture. The multiple is 70.
Component 3 is 2% of the mixture. The multiple is 20.

Step 3

Component number	**Ship type**	**Factor (f)**	**% in mixture**	**Multiples (f x %)**	**Pollution category of mixture**	**Resultant ship type**
1	n/a	0	91	0	Y	**3**
2	3	10	7	70		
3	3	10	2	20		
Ss				**90**		

Ss = multiple 1 + multiple 2 + multiple 3 = 90
Referring to column 1 of table 4, Ss < 100
In response to the associated question in column 2 of table 4 (reading across the row), is the Pollution Category of the X or Y, therefore the **ship type is 3**.

APPENDIX 6

FORMAT FOR PROPOSING TRIPARTITE AGREEMENTS FOR PROVISIONAL ASSESSMENT OF LIQUID SUBSTANCES
(for insertion in lists 1, 3 or 4 of the MEPC.2/Circular)

Name of Product:
Proposed for inclusion in list: [ ] **of the MEPC.2/Circular**
Contains name:
(for list 3 and 4 products)

Reporting country:
Participating countries:
Company:

Proposed GESAMP hazard profile:

A1	A2	B1	B2	D3	E2

Pollution category: _____
Based on analogy to (if applicable): _____
Pollution category: _____
Ship type: _____

Proposed carriage conditions:

Column		Column		Column	
d		i'		l	
e		i''		m	-deleted-
f		i'''		n	
g		j		o	
h		k			

Additional technical information:

Property		Qual	Value or range	References and comments
Molecular weight				
Density @ 20ºC	(kg/m^3)			
Flash Point (cc)	(°C)			
Boiling Point	(°C)			
Melting Point/Pour Point	(°C)			
Water solubility @ 20ºC	(mg/l)			
Viscosity @ 20ºC	(mPa.s)			
Vapour Pressure @ 20ºC	(Pa)			
Vapour Pressure @ 40ºC	(Pa)			
SVC @ 20ºC	(mg/l)			
SVC @ 40ºC	(mg/l)			
AutoignitionTemp	(°C)			
Explosion Limits	(% v/v)			
Carriage Temperature	(ºC)			
Unloading Temperature	(ºC)			
MESG	(mm)			

Note: If temperatures other than 20ºC or 40ºC are used, please indicate the reference temperature.

Toxicity/Human health:

Property	Units	Qualifier	Value or range
Oral ATE/LD_{50}	(mg/kg)		
Dermal ATE/LD_{50}	(mg/kg)		
Inhalation ATE/LC_{50}[14]	(mg/l/4h)		
Corrosive to skin[15] (Y/N)			

[14] The criteria for inhalation toxicity are based on LC_{50} data relating to four-hour exposures. Where LC_{50} data for one-hour exposures are available, such values can be divided by four to be considered equivalent to LC_{50} (four hours).

[15] If corrosive, include exposure time (hours).