

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Committee of Experts and the
Working Party on the Transport of Dangerous Goods

Geneva, 22-26 March 2009

OUTSTANDING ISSUES OR PROPOSALS OF AMENDMENTS TO THE RECOMMENDATIONS
ON THE TRANSPORT OF DANGEROUS GOODS

Environmentally hazardous substances

Note by the secretariat

1. Reference is made to ST/SG/AC.10/C.3/2004/109. The secretariat has prepared a list of all substances of the UN Model Regulations Dangerous Goods List which are identified in the IMDG Code as marine pollutants or severe marine pollutants, and checked the data available on these substances to see whether they meet the GHS criteria for classification as aquatic pollutants according to 2.9.3 of the Model Regulations (see annex).
2. Two sources of data have been used: the GESAMP/EHS Composite List of Hazard Profiles (2003) (IMO document BLG/Circ. 13 of 16 May 2003) and the N-CLASS database.
3. The data have been consolidated in a table as follows:

- Column (1): UN number
- Column (2): Proper shipping name (English)
- Column (3): Proper shipping name (French)
- Column (4): Identification as marine pollutant in the IMDG Code
- Column (5): GESAMP Hazard Profile List, Column A (Bioaccumulation and training)
- Column (6): GESAMP Hazard Profile List, Column B (Damage to living resources)
- Column (7): Classification as aquatic pollutant according to the N-CLASS database and Council Directive 67/548/EEC, as amended (EU)
- Column (8): Comments
- Column (9): Assessment by the secretariat whether the data provided by these two sources can lead to the conclusion that the criteria of 2.9.3 are met.

Methodology

4. Marine pollutants in the IMDG Code are identified on the basis of data provided by GESAMP/EHS i.e. when hazard rating 4 or 5 has been assigned to the substance in column B (column (6) in this document), or hazard rating “+”, “Z” or “T” in column A (column (5) in this document).

5. Hazard rating 4 or 5 in column B implies that the 96 h LC₅₀ to aquatic organisms is ≤ 1 mg/l, and therefore the substance meets the criteria of 2.9.3.
6. Hazard rating T in column A means that the substance is liable to produce tainting of seafood. This criterion is not used in the GHS and therefore is not relevant for this assessment.
7. Hazard rating “+” or “Z” in column A indicates that the substance is bioaccumulated, but these ratings are useful for the purposes of classification according to 2.9.3 only when the substance has a 96 h LC₅₀ comprised between 1 and 10 mg/l, which is indicated by the hazard rating 3 in column B.
8. Hazard ratings 2, 1 or 0 in column B implies that the 96 h LC₅₀ of the substance is more than 10 mg/l and therefore does not meet the criteria of 2.9.3.
9. Therefore, apart from those referred to in para. 5 above, only substances assigned hazard rating 3 in column B may meet the criteria of 2.9.3, depending on their biodegradability and bioaccumulation properties (unless other data are available).
10. Hazard ratings “Z” and “+” do not give indication about biodegradability, and therefore are not always sufficient to reach a conclusion according to 2.9.3. They are described as follows in GESAMP report and studies No. 35:

““+” Refers to a substance which is known to be accumulated to a significant extent by certain marine organisms, which is not readily excreted or degraded into a less harmful metabolite by the organism and which as a consequence is known, or strongly suspected to be harmful to the animal, or to man if he eats the organism. Examples are mercury compounds and DDT.

Note 1: No precise definition of the words “significant extent” has been adopted but it is generally agreed that a material which is bioaccumulated to the extent of one hundredfold would be a candidate for this rating. Similarly where the log of the octanol: water partition coefficient ($\log P_{ow}$) exceeds three the substance would be a candidate for inclusion. Final inclusion is dependent on the assessment of likely harm.

Note 2: Substance which are known to be converted to other substances which by themselves will fall within this definition are included in this group.

“Z” Refers to a substance which is known or strongly suspected to be accumulated by marine organisms but which is rapidly lost (biological half-life of about 1 week or less) by that organism when it moves or is moved from the zone of exposure. Substances are only given this rating when they are also known or strongly suspected to be harmful to the organisms or man.

Note: Where a substance causes taint but also merits a “Z” rating, a “T” rating only is allocated.”

11. From these descriptions, it can be concluded that substances assigned hazard ratings “T, 3” or “Z, 3” are not very likely to meet the criteria unless they are not rapidly degradable. Those assigned hazard rating “+, 3” are likely to meet the criteria, but since the $\log P_{ow}$ and BCF cut-off limits ($\log P_{ow} > 3$ and $BCF > 100$) are different from those of the GHS ($\log P_{ow} \geq 4$ and $BCF \geq 500$), some of them may not meet the criteria (unless they are not rapidly degradable).

12. In order to determine whether the above critical cases met the GHS criteria, the secretariat has checked the data available from the N-CLASS database for all marine pollutants.
13. The indications R50, R50 R53 and R51 R53 used in the EU classification system have the following meaning:

R50	96 hr LC50 (for fish) <= 1 mg/l or 48 hr EC50 (for Daphnia) <= 1 mg/l or 72 hr IC50 (for algae) <= 1 mg/l
R50 R53	96 hr LC50 (for fish) <= 1 mg/l or 48 hr EC50 (for Daphnia) <= 1 mg/l or 72 hr IC50 (for algae) <= 1 mg/l and the substance is not readily degradable and/or the Log Pow >= 3 (unless the experimentally determined BCF <100)
R51 R53	96 hr LC50 (for fish) 1 mg/l < LC50 <= 10 mg/l or 48 hr EC50 (for Daphnia) 1 mg/l < EC50 <= 10 mg/l or 72 hr IC50 (for algae) 1 mg/l < IC50 <= 10 mg/l and the substance is not readily degradable and/or the Log Pow >= 3 (unless the experimentally determined BCF <100)

Notes

- *The differences between the GHS criteria and the N-class criteria are printed in bold.*
- *Daphnia is the model organism for crustacea, therefore the 48 hr EC50 values of the N-Class and of the GHS are comparable.*
- *Algae is the model organism for aquatic plants, therefore the 72 hr IC50 values of the N-Class and of the GHS are comparable.*
- *The abbreviations (Log) Pow and (Log) Kow have exactly the same meaning.*

In the case of R50 and R50 R53, the toxicity is equal to or below 1 mg/l, therefore the substances to which they have been assigned meet the criteria of section 2.1.3.

In the case of R51 R53, the criteria are met if the substance is not readily degradable. Otherwise the values of Log P_{ow} and BCF had to be checked.

14. A “YES” in column (9) means that according to the GESAMP and/or the EU data, the criteria of 2.9.3 are met, and the special provision suggested in ST/SG/AC.10/C.3/2004/109 could be applied.
15. A “NO” in column (9) means that the data provided by GESAMP or the N-CLASS database were not sufficient to conclude that the substance met the criteria, and therefore the special provision suggested in ST/SG/AC.10/C.3/2004/109 would not be appropriate at this time.

UN No	Name and description	Nom et description	Column (4) of IMDG DGL Subsidiary risk (P or PP)	GESAMP hazard profile		Aquatic classification (NClass database)	Comments	Aquatic pollutant special provision
				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
0076	DINITROPHENOL, dry or wetted with less than 15% water, by mass†	DINITROPHÉNOL sec ou humidifié avec moins de 15 % (masse) d'eau†	P	0	4	N, R50 N, R50-R53 N, R51-R53	NClass database: The Commission WG on the Classification and Labelling of Dangerous Substances agreed to split the entry into three entries with 1)R50 for the 2,4-isomer; 2) R50-53 for the 2,4- or 2,6- isomer and the mixture; 3) R51-53 for the 2,3-, 2,5-, 2,6- and 3,4-isomer.	YES
0077	DINITRO-PHENOLATES, alkali metals, dry or wetted with less than 15% water, by mass†	DINITROPHÉNATES de métaux alcalins secs ou humidifiés avec moins de 15 % (masse) d'eau†	P	0	4		Not listed in NClass database GESAMP: see dinitrophenols	YES
0234	SODIUM DINITRO-o-CRESOLATE, dry or wetted with less than 15% water, by mass†	DINITRO-o-CRÉSATE DE SODIUM sec ou humidifié avec moins de 15 % (masse) d'eau†	P	T	4	N, R50-R53	NClass database: default classification from the Commission WG in analogy with DNOC. Gesamp: See 4,6 DNOC	YES
1017	CHLORINE	CHLORE	P	0	4	N, R50		YES
1051	HYDROGEN CYANIDE, STABILIZED containing less than 3% water	CYANURE D'HYDROGÈNE STABILISÉ, avec moins de 3 % d'eau	P	0	4	N, R50-R53	GESAMP: See hydrocyanic acid	YES
1064	METHYL MERCAPTAN	MERCAPTAN MÉTHYLIQUE	P	(T)	4	N, R50-R53	GESAMP: See Methanethiol	YES
1092	ACROLEIN, STABILIZED	ACROLÉINE STABILISÉE	P	T	4	N, R50		YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1099	ALLYL BROMIDE	BROMURE D'ALLYLE	P	0	4		Not listed in the N-Class database GESAMP: see 3-Bromopropylene	YES
1111	AMYL MERCAPTAN	MERCAPTAN AMYLIQUE	P	T	2		Not listed in the N-Class database	NO
1143	CROTONALDEHYDE, STABILIZED	ALDÉHYDE CROTONIQUE (CROTONALDÉHYDE) STABILISÉ	P	0	4	N, R50		YES
1163	DIMETHYLHYDRAZINE, UNSYMMETRICAL	DIMÉTHYLHYDRAZINE ASYMÉTRIQUE	P	0	(4)	N, R51-R53	Not readily degradable	YES
1203	MOTOR SPIRIT or GASOLINE or PETROL	ESSENCE	P	+	3	Nota H	Nota H This nota applies only to certain coal- and oil-derived complex substances. Concerning environmental effects, this substance is subject to 'self-classification'. GESAMP: Petrol leaded only	NO
1259	NICKEL CARBONYL	NICKEL-TÉTRACARBONYLE	PP	+	4	N, R50-R53	GESAMP: See Nickel tetracarbonyl	YES
1303	VINYLDENE CHLORIDE, STABILIZED	CHLORURE DE VINYLDÈNE STABILISÉ	P	0	1	NC	NClass database: Not classified as dangerous for the environment by the Commission WG	NO
1320	DINITROPHENOL, WETTED with not less than 15% water, by mass	DINITROPHÉNOL HUMIDIFIÉ avec au moins 15 % (masse) d'eau	P	0	4	N, R50 N, R50-R53 N, R51-R53	See 0076	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1321	DINITRO-PHENOLATES, WETTED with not less than 15% water, by mass	DINITROPHÉNATES HUMIDIFIÉS avec au moins 15 % (masse) d'eau	P	0	4	Not listed in NClass database	See 0077 Not readily degradable	YES
1348	SODIUM DINITRO-o-CRESOLATE, WETTED with not less than 15% water, by mass	DINITRO-o-CRÉSATE DE SODIUM HUMIDIFIÉ avec au moins 15 % (masse) d'eau	P	T	4	N, R50-R53	See 0234	YES
1381	PHOSPHORUS, WHITE or YELLOW, DRY or UNDER WATER or IN SOLUTION	PHOSPHORE BLANC ou JAUNE, SEC, RECOUVERT D'EAU ou EN SOLUTION	PP	+	4	N, R50		YES
1469	LEAD NITRATE	NITRATE DE PLOMB	P	+	1	N, R50-R53	NClass database: See Nitric acid, lead (2+) salt / Default classification for lead compounds with the exception of those specified elsewhere in Annex I of Directive 67/548/EEC	NO
1470	LEAD PERCHLORATE, SOLID	PERCHLORATE DE PLOMB, SOLIDE	P	+	1	N, R50-R53	NClass database: See Perchloric acid, lead (2+) salt / Default classification for lead compounds with the exception of those specified elsewhere in Annex I of Directive 67/548/EEC	NO
1541	ACETONE CYANOHYDRIN, STABILIZED	CYANHYDRINE D'ACÉTONE STABILISÉE	P	0	4	N, R50-53	NClass database: Classification R50-53 by the Commission WG on the basis of the lack of ready biodegradation of hydrogen cyanide	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1565	BARIUM CYANIDE	CYANURE DE BARYUM	P	0	4	N, R50-53	NClass database: Default classification for all salts of hydrogen cyanide Analogy with hydrogen cyanide	YES
1569	BROMOACETONE	BROMACÉTONE	P	0	(4)		Not listed in the N-Class database GESAMP: Crustacea tests 1 mg/l (48h) and 0.85 mg/l (72h)	YES
1573	CALCIUM ARSENATE	ARSÉNIATE DE CALCIUM	P	0	3	N, R50-53	NClass database: See Arsenic acid, calcium salt Analogy with arsenic <u>provisionally</u> classified as N; R50-53	NO
1574	CALCIUM ARSENATE AND CALCIUM ARSENITE MIXTURE, SOLID	ARSÉNIATE DE CALCIUM ET ARSÉNITE DE CALCIUM EN MÉLANGE SOLIDE	P	0	3		Not listed in the N-Class database Data to be checked	NO
1575	CALCIUM CYANIDE	CYANURE DE CALCIUM	P	0	4	N, R50-53	Default classification by the Commission WG for all salts of hydrogen cyanide Analogy with hydrogen cyanide GESAMP: See Potassium cyanide	YES
1577	CHLORODINITRO-BENZENES, LIQUID	CHLORODINITROBENZÈNES LIQUIDES	P	Z	4	N, R50-53	NClass database: Default classification in R53 by the Commission WG	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1585	COPPER ACETOARSENITE	ACÉTOARSÉNITE DE CUIVRE	P	+	3		Not listed in the N-Class database Data to be checked	NO
1586	COPPER ARSENITE	ARSÉNITE DE CUIVRE	P	+	3		Not listed in the N-Class database Data to be checked	NO
1587	COPPER CYANIDE	CYANURE DE CUIVRE	PP	+	4	N, R50-53	NClass database: Default classification for all salts of hydrogen cyanide Analogy with hydrogen cyanide	YES
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	CYANURES INORGANIQUES, SOLIDES, N.S.A.	P	0	4		Not listed in NClass database GESAMP: See Potassium cyanide	YES
1589	CYANOGEN CHLORIDE, STABILIZED	CHLORURE DE CYANOGENÈ STABILISÉ	P	0	4		Not listed in NClass database	YES
1590	DICHLORO-ANILINES, LIQUID	DICHLORANILINES LIQUIDES	P	Z	4	N, R50-53	NClass database: See Benzenamine, 3,4-dichloro-	YES
1598	DINITRO-o-CRESOL	DINITRO-o-CRÉSOL	P	T	4	N, R50-53	NClass database: See Phenol, 2-methyl-4,6-dinitro-	YES
1599	DINITROPHENOL SOLUTION	DINITROPHÉNOL EN SOLUTION	P	0	4	N, R50 N, R50-R53 N, R51-R53	See 0076	YES
1606	FERRIC ARSENATE	ARSÉNIATE DE FER III	P	0	2		Not listed in NClass database	NO
1607	FERRIC ARSENITE	ARSÉNITE DE FER III	P	0	3		Not listed in NClass database	NO
1608	FEROUS ARSENATE	ARSÉNIATE DE FER II	P	0	2		Not listed in NClass database	NO

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1611	HEXAETHYL TETRAPHOSPHATE	TÉTRAPHOSPHATE D'HEXAÉTHYLE	P	0	4		Not listed in NClass database	YES
1613	HYDROCYANIC ACID, AQUEOUS SOLUTION (HYDROGEN CYANIDE, AQUEOUS SOLUTION) with not more than 20% hydrogen cyanide	ACIDE CYANHYDRIQUE EN SOLUTION AQUEUSE (CYANURE D'HYDROGÈNE EN SOLUTION AQUEUSE) contenant au plus 20 % de cyanure d'hydrogène	P	0	4	N, R50-R53	See 1051	YES
1614	HYDROGEN CYANIDE, STABILIZED, containing less than 3% water and absorbed in a porous inert material	CYANURE D'HYDROGÈNE STABILISÉ, avec moins de 3% d'eau et absorbé dans un matériau inerte poreux	P	0	4	N, R50-R53	See 1051	YES
1616	LEAD ACETATE	ACÉTATE DE PLOMB	P	+	(2)	N, R50-R53		YES
1617	LEAD ARSENATES	ARSÉNIATES DE PLOMB	P	+	3	N, R50-R53	NClass database: Lead compounds	YES
1618	LEAD ARSENITES	ARSÉNITES DE PLOMB	P	+	3		Not listed in NClass database	YES
1620	LEAD CYANIDE	CYANURE DE PLOMB	P	+	3	N, R50-R53	NClass database: Salts of hydrogen cyanide	YES
1621	LONDON PURPLE	POURPRE DE LONDRES	P	0	3		Not listed in NClass database GESAMP: See Arsenic compounds NOS	NO
1622	MAGNESIUM ARSENATE	ARSÉNIATE DE MAGNÉSIUM	P	0	2	N, R50-53	NClass database: See Arsenic acid, magnesium salt Analogy with arsenic <u>provisionally</u> classified as N; R50-53	NO

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1623	MERCURIC ARSENATE	ARSÉNIATE DE MERCURE II	PP	+	4		Not listed in NClass database Mercury compound	YES
1624	MERCURIC CHLORIDE	CHLORURE DE MERCURE II	PP	+	4	N, R50-53		YES
1625	MERCURIC NITRATE	NITRATE DE MERCURE II	PP	+	4	N, R50-53	NClass database: See Mercury chloride Inorganic compounds of mercury	YES
1626	MERCURIC POTASSIUM CYANIDE	CYANURE DOUBLE DE MERCURE ET DE POTASSIUM	PP	+	4		Not listed in NClass database Inorganic compound of mercury	YES
1627	MERCUROUS NITRATE	NITRATE DE MERCURE I	PP	+	4	N, R50-53	NClass database: See Nitric acid, mercury (1+) salt Inorganic compounds of mercury	YES
1629	MERCURY ACETATE	ACÉTATE DE MERCURE	PP	+	4	N, R50-53	NClass database: See Acetic acid, mercury(2+) salt Organic compound of mercury GESAMP: See Mercuric acetate	YES
1630	MERCURY AMMONIUM CHLORIDE	CHLORURE DE MERCURE AMMONIACAL	PP	+	4	N, R50-53	NClass database: See Mercury amide chloride Inorganic compounds of mercury GESAMP: See Mercuric ammonium chloride	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1631	MERCURY BENZOATE	BENZOATE DE MERCURE	PP	+	4		Not listed in NClass database GESAMP: see Mercuric benzoate	YES
1634	MERCURY BROMIDES	BROMURES DE MERCURE	PP	+	4	N, R50-53	NClass database: Inorganic compounds of mercury	YES
1636	MERCURY CYANIDE	CYANURE DE MERCURE	PP	+	4	N, R50-53	NClass database: Salts of hydrogen cyanide GESAMP: see Mercuric cyanide	YES
1637	MERCURY GLUCONATE	GLUCONATE DE MERCURE	PP	+	4		Not listed in NClass database Organic compounds of mercury GESAMP: see Mercurous gluconate	YES
1638	MERCURY IODIDE	IODURE DE MERCURE	PP	+	4	N, R50-53	NClass database: Inorganic compounds of mercury GESAMP: see Mercuric iodide	YES
1639	MERCURY NUCLEATE	NUCLÉINATE DE MERCURE	PP	+	4		Not listed in the N-Class database GESAMP: See Methyl mercuric chloride	YES
1640	MERCURY OLEATE	OLÉATE DE MERCURE	PP	+	4	N, R50-53	NClass database: See 9-Octadecenoic acid (Z)-, mercury(2+) salt Organic compound of mercury GESAMP: See Mercuric oleate	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1641	MERCURY OXIDE	OXYDE DE MERCURE	PP	+	4	N, R50-53	NClass database: Inorganic compounds of mercury GESAMP: See Mercuric oxide	YES
1642	MERCURY OXYCYANIDE, DESENSITIZED	OXYCYANURE DE MERCURE DÉSENSIBILISÉ	PP	+	4		Not listed in the N-Class database GESAMP: See Mercuric oxycyanide	YES
1643	MERCURY POTASSIUM IODIDE	IODURE DOUBLE DE MERCURE ET DE POTASSIUM	PP	+	4		Not listed in the N-Class database GESAMP: See Mercuric potassium iodide	YES
1644	MERCURY SALICYLATE	SALICYLATE DE MERCURE	PP	+	4		Not listed in the N-Class database GESAMP: See Mercuric salicylate	YES
1645	MERCURY SULPHATE	SULFATE DE MERCURE	PP	+	4	N, R50-53	NClass database: See Sulfuric acid, mercury(2+) salt (1:1) Inorganic compounds of mercury GESAMP: See Mercuric sulphate	YES
1646	MERCURY THIOCYANATE	THIOCYANATE DE MERCURE	PP	+	4	N, R50-53	NClass database: See Thiocyanic acid, mercury(2+) salt Inorganic compounds of mercury GESAMP: See Mercuric thiocyanate	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1647	METHYL BROMIDE AND ETHYLENE DIBROMIDE MIXTURE, LIQUID	BROMURE DE MÉTHYLE ET DIBROMURE D'ÉTHYLÈNE EN MÉLANGE LIQUIDE	P	0	3		Not listed in the N-Class database GESAMP: See ethylene dibromide	NO
1649	MOTOR FUEL ANTI-KNOCK MIXTURE	MÉLANGE ANTIDÉTONANT POUR CARBURANTS	P	+	4/3	N, R50-53	NClass database: See Plumbane, tetramethyl-Lead alkyls GESAMP: See Tetramethyl lead (+/3) and Tetraethyl lead (+/4)	YES
1653	NICKEL CYANIDE	CYANURE DE NICKEL	PP	+	4	N, R50-53	NClass database: Salts of hydrogen cyanide	YES
1669	PENTACHLOROETHANE	PENTACHLORÉTHANE	P	Z	3	N, R51-53		YES
1670	PERCHLORO-METHYL MERCAPTAN	MERCAPTAN MÉTHYLIQUE PERCHLORÉ	P	0	(4)		Not listed in the N-Class database GESAMP: precautionary classification	NO
1674	PHENYLMERCURIC ACETATE	ACÉTATE DE PHÉNYLMERCURE	PP	+	4	N, R50-53	NClass database: See Phenylmercury acetate GESAMP: See Mercuric compounds, organic = Methyl mercuric chloride	YES
1679	POTASSIUM CUPROCYANIDE	CUPROCYANURE DE POTASSIUM	PP	+	4		Not listed in the N-Class database GESAMP: See Sodium cuprocyanide	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1680	POTASSIUM CYANIDE, SOLID	CYANURE DE POTASSIUM, SOLIDE	P	0	4	N, R50-53	NClass database: Default classification for all salts of hydrogen cyanide Analogy with hydrogen cyanide	YES
1683	SILVER ARSENITE	ARSÉNITE D'ARGENT	P	0	(4)		Not listed in the N-Class database GESAMP: Data uncertain (toxicity)	NO
1684	SILVER CYANIDE	CYANURE D'ARGENT	P	0	4	N, R50-53	NClass database: Default classification for all salts of hydrogen cyanide Analogy with hydrogen cyanide	YES
1689	SODIUM CYANIDE, SOLID	CYANURE DE SODIUM, SOLIDE	P	0	4	N, R50-53	NClass database: Default classification for all salts of hydrogen cyanide Analogy with hydrogen cyanide	YES
1690	SODIUM FLUORIDE, SOLID	FLUORURE DE SODIUM, SOLIDE	P	0	1	N.C.		NO
1692	STRYCHNINE or STRYCHNINE SALTS	STRYCHNINE ou SELS DE STRYCHNINE	P	0	4	N, R50-53		YES
1695	CHLOROACETONE, STABILIZED	CHLORACÉTONE STABILISÉE	P	0	2		Not listed in the N-Class database	NO
1698	DIPHENYLAMINE CHLOROARSINE	DIPHÉNYLAMINECHLORARSINE	PP	+	(4)		Not listed in the N-Class database	YES
1699	DIPHENYLCHLOROARSINE, LIQUID	DIPHÉNYLCHLORARSINE LIQUIDE	PP	+	(4)		Not listed in the N-Class database	YES

UN No	Name and description	Nom et description	Column (4) of IMDG DGL Subsidiary risk (P or PP)	GESAMP hazard profile		Aquatic classification (NClass database)	Comments	Aquatic pollutant special provision
				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1702	1,1,2,2-TETRACHLORO-ETHANE	1,1,2,2-TÉTRACHLORÉTHANE	P	Z	2		Not listed in the N-Class database	NO
1704	TETRAETHYL DITHIOPYROPHOSPHATE	DITHIOPYROPHOSPHATE DE TÉTRAÉTHYLE	P	0	(4)	N, R50-53	NClass database: See Sulfofep GESAMP: See Sulfofep	YES
1707	THALLIUM COMPOUND, N.O.S.	COMPOSÉ DU THALLIUM, N.S.A.	P	+	2	N, R51-53	GESAMP: Sparingly soluble material of heavy metal	NO (N.O.S. entry)
1713	ZINC CYANIDE	CYANURE DE ZINC	P	0	4	N, R50-53	NClass database: Salts of hydrogen cyanide	YES
1739	BENZYL CHLOROFORMATE	CHLOROFORMIATE DE BENZYLE	P	0	4	N, R50-53		YES
1753	CHLORO-PHENYLTRI-CHLOROSILANE	CHLOROPHÉNYL-TRICHLOROSILANE	P	(+)	-		Not listed in the N-Class database	NO
1761	CUPRIETHYLENE-DIAMINE SOLUTION	CUPRIÉTHYLÈNEDIAMINE EN SOLUTION	P	+	(3)		Not listed in the N-Class database GESAMP: rated by analogy with other copper compounds	NO
1766	DICHLORO-PHENYLTRI-CHLOROSILANE	DICHLOROPHÉNYL-TRICHLOROSILANE	P	(+)	-		Not listed in the N-Class database	NO
1843	AMMONIUM DINITRO-o-CRESOLATE, SOLID	DINITRO-o-CRÉSATE D'AMMONIUM, SOLIDE	P	T	4		Not listed in the N-Class database Gesamp: See 4,6 DNOC	YES
1846	CARBON TETRACHLORIDE	TÉTRACHLORURE DE CARBONE	P	Z	2	R52-53	GESAMP: See Tetrachloromethane	NO
1889	CYANOGEN BROMIDE	BROMURE DE CYANOGENÈNE	P	0	4		Not listed in the N-Class database	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1892	ETHYLDICHLORO-ARSINE	ÉTHYLDICHLORARSINE	P	0	4		Not listed in the N-Class database	YES
1894	PHENYLMERCURIC HYDROXIDE	HYDROXYDE DE PHÉNYLMERCURE	PP	+	(4)	N, R50-53	NClass database: See phenylmercury nitrate	YES
1895	PHENYLMERCURIC NITRATE	NITRATE DE PHÉNYLMERCURE	PP	+	(4)	N, R50-53	GESAMP: See Phenylmercuric hydroxide	YES
1897	TETRACHLORO-ETHYLENE	TÉTRACHLORÉTHYLÈNE	P	Z	2	N, R51-53	NClass database: Log Pow = 3.4 BCF=400 Nor readily degradable	YES
1935	CYANIDE SOLUTION, N.O.S.	CYANURE EN SOLUTION, N.S.A.	P	0	4		Not listed in the N-Class database GESAMP: See Potassium cyanide	YES
2023	EPICHLORO-HYDRIN	ÉPICHLORHYDRINE	P	0	4	N.C.		YES
2024	MERCURY COMPOUND, LIQUID, N.O.S.	COMPOSÉ LIQUIDE DU MERCURE, N.S.A.	PP	+	4	N, R50-53	NClass database: Organic and inorganic mercuric compounds / Default classification R50-53 GESAMP: For Mercury compounds (organic), see Methyl mercuric chloride	YES
2025	MERCURY COMPOUND, SOLID, N.O.S.	COMPOSÉ SOLIDE DU MERCURE, N.S.A.	PP	+	4	N, R50-53	NClass database: Organic and inorganic mercuric compounds / Default classification R50-53 GESAMP: For Mercury compounds (organic), see Methyl mercuric chloride	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2026	PHENYLMERCURIC COMPOUND, N.O.S.	COMPOSÉ PHÉNYLMERCURIQUE, N.S.A.	PP	+	4	N, R50-53	NClass database: Organic and inorganic mercuric compounds / Default classification R50-53 GESAMP: See Mercuric compounds, organic = Methyl mercuric chloride	YES
2046	CYMENES	CYMÈNES	PP	+	4		Not listed in the N-Class database	YES
2052	DIPENTENE	DIPENTÈNE	P	T	2	N, R50-53	NClass database: Log Pow = 4.23 L(E)C50 < 1 mg/l Nor readily degradable	YES
2210	MANEB or MANEB PREPARATION with not less than 60% maneb	MANÈBE ou PRÉPARATIONS DE MANÈBE contenant au moins 60 % de manèbe	P	0	4	N, R50-53		YES
2235	CHLOROBENZYL CHLORIDES, LIQUID	CHLORURES DE CHLOROBENZYLE, LIQUIDES	P	Z	(3)		Not listed in the N-Class database	NO
2237	CHLORONITRO-ANILINES	CHLORONITRANILINES	P	0	4	N, R51-53	NClass database: Log Pow = 2.7 BCF=13 Not readily degradable	YES
2238	CHLOROTOLUENES	CHLOROTOLUÈNES	P	Z/T	2/3	N, R51-53	GESAMP: m-chlorotoluene Z/2 o-chlorotoluene T/3 p-chlorotoluene Z/3 Mixtures: Column B = 3 Not readily degradable	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2279	HEXACHLORO-BUTADIENE	HEXACHLOROBUTADIÈNE	PP	+	4		Not listed in the N-Class database	YES
2291	LEAD COMPOUND, SOLUBLE, N.O.S.	COMPOSÉ SOLUBLE DU PLOMB, N.S.A.	P	+	(3)	N, R50-53	NClass database: Lead compounds	YES
2306	NITROBENZOTRI-FLUORIDES, LIQUID	FLUORURES DE NITROBENZYLIDYNE, LIQUIDES	P	Z	(3)		Not listed in the N-Class database	NO
2307	3-NITRO-4-CHLOROBENZO-TRIFLUORIDE	FLUORURE DE NITRO-3 CHLORO-4 BENZYLIDYNE	P	Z	(3)		Not listed in the N-Class database	NO
2315	POLY-CHLORINATED BIPHENYLS, LIQUID	DIPHÉNYLES POLYCHLORÉS (PCB) LIQUIDES	PP	+	4	N, R50-53		YES
2316	SODIUM CUPROCYANIDE, SOLID	CUPROCYANURE DE SODIUM SOLIDE	PP	+	4		Not listed in the N-Class database	YES
2317	SODIUM CUPROCYANIDE SOLUTION	CUPROCYANURE DE SODIUM EN SOLUTION	PP	+	4		Not listed in the N-Class database	YES
2321	TRICHLORO-BENZENES, LIQUID	TRICHLOROBENZÈNES LIQUIDES	P	+/Z	4/3	N, R50-53	NClass database: only data for 1,2,4-trichlorobenzene GESAMP: 1,2,3-trichlorobenzene (+/4) et 1,2,4-trichlorobenzene (Z/3)	YES
2322	TRICHLORO-BUTENE	TRICHLOROBUTÈNE	P	Z	(2)	N, R50-53	NClass database: only data for 2,3,4 trichloro-1-butène	YES
2346	BUTANEDIONE	BUTANEDIONE	P	?	?		Not listed in the N-Class database	NO
2363	ETHYL MERCAPTAN	MERCAPTAN ÉTHYLIQUE	P	(T)	4	N, R50-53		YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2382	DIMETHYL-HYDRAZINE, SYMMETRICAL	DIMÉTHYLHYDRAZINE SYMÉTRIQUE	P	0	(4)	N, R50-53	NClass database: Analogy with 1,1 dimethylhydrazine (unsymmetrical) see UN1163	YES
2433	CHLORONITRO-TOLUENES, LIQUID	CHLORONITROTOLUÈNES LIQUIDES	P	Z	3		Not listed in the N-Class database GESAMP: Fish toxicity above 17 mg/l	NO
2447	PHOSPHORUS, WHITE, MOLTEN	PHOSPHORE BLANC FONDU	PP	+	4	N, R50		YES
2471	OSMIUM TETROXIDE	TÉTROXYDE D'OSMIUM	PP	0	4	N.C.	NClass database: Not classified by the Commission WG due to a lack of data	YES
2504	TETRABROMO-ETHANE	TÉTRABROMÉTHANE	P	Z	2	R52-53		NO
2514	BROMOBENZENE	BROMOBENZÈNE	P	Z	(2)	N, R51-53	NClass database: Pow < 4 and BCF < 500 Not readily degradable	YES
2515	BROMOFORM	BROMOFORME	P	0	2	N, R51-53	Pow < 4 and BCF < 500 Not readily degradable	YES
2516	CARBON TETRABROMIDE	TÉTRABROMURE DE CARBONE	P	Z	(2)		Not listed in the N-Class database	NO
2518	1,5,9-CYCLO-DODECATRIENE	CYCLODODÉCATRIÈNE-1,5,9	PP	+	4		Not listed in the N-Class database	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2558	EPIBROMOHYDRIN	ÉPIBROMHYDRINE	P	-	4		Not listed in the N-Class database GESAMP: See 1-Bromo-2,3-epoxypropane	YES
2567	SODIUM PENTA-CHLOROPHENATE	PENTACHLOROPHÉNATE DE SODIUM	PP	+	4	N, R50-53	NClass database: Analogy with pentachlorophenol GESAMP: See Pentachlorophenol	YES
2570	CADMIUM COMPOUND	COMPOSÉ DU CADMIUM	PP	+	5	N, R50-53	NClass database: Cadmium compounds	YES
2573	THALLIUM CHLORATE	CHLORATE DE THALLIUM	P	+	2		Not listed in the N-Class database GESAMP: See Thallium compounds	NO
2574	TRICRESYL PHOSPHATE with more than 3% ortho isomer	PHOSPHATE DE TRICRÉSYLE avec plus de 3 % d'isomère ortho	PP	+	4		Not listed in the N-Class database	YES
2651	4,4'-DIAMINODIPHENYL-METHANE	DIAMINO-4,4' DIPHÉNYLMÉTHANE	P	Z	3	N, R51-53	NClass database (Summary record ECBI/49/98-Rev2): Crustacea EC50 = 2.3 mg/l No biodegradation	YES
2727	THALLIUM NITRATE	NITRATE DE THALLIUM	P	+	2	N, R51-53	NClass database: See Nitric acid, thallium(1+) salt Default classification for Thallium compounds / No data provided GESAMP: See Thallium compounds	NO

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	PESTICIDE MERCURIEL SOLIDE TOXIQUE	PP	+	4		Not listed in the N-Class database GESAMP: For Mercury compounds (organic), see Methyl mercuric chloride	YES
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C	PESTICIDE MERCURIEL LIQUIDE INFLAMMABLE, TOXIQUE, ayant un point d'éclair inférieur à 23 °C	PP	+	4		Not listed in the N-Class database GESAMP: For Mercury compounds (organic), see Methyl mercuric chloride	YES
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	PESTICIDE ORGANOSTANNIQUE SOLIDE TOXIQUE	PP	+	5		Not listed in NClass database GESAMP: See Organotin compounds	YES
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C	PESTICIDE ORGANOSTANNIQUE LIQUIDE INFLAMMABLE, TOXIQUE, ayant un point d'éclair inférieur à 23 °C	PP	+	5		Not listed in NClass database GESAMP: See Organotin compounds	YES
2826	ETHYL CHLOROTHIOFORMATE	CHLOROTHIOFORMIATE D'ÉTHYLE	P	T	(4)		Not listed in NClass database GESAMP: Data should be confirmed	NO
2956	5-tert-BUTYL-2,4,6-TRINITRO-m-XYLENE (MUSK XYLENE)	tert-BUTYL-5 TRINITRO-2,4,6 m-XYLÈNE (MUSC-XYLÈNE)	P	?	?	N, R50-53	NClass database: See 1-(1,1-dimethylethyl)-3,5-dimethyl-2,4,6-trinitro-benzene	YES
2968	MANEB, STABILIZED or MANEB PREPARATION, STABILIZED against self-heating	MANÈBE STABILISÉ ou PRÉPARATIONS DE MANÈBE STABILISÉE contre l'auto-échauffement	P	0	4	N, R50-53	See 2210	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C	PESTICIDE MERCURIEL LIQUIDE TOXIQUE, INFLAMMABLE, ayant un point d'éclair égal ou supérieur à 23 °C	PP	+	4		Not listed in the N-Class database GESAMP: For Mercury compounds (organic), see Methyl mercuric chloride	YES
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	PESTICIDE MERCURIEL LIQUIDE TOXIQUE	PP	+	4		Not listed in the N-Class database GESAMP: For Mercury compounds (organic), see Methyl mercuric chloride	YES
3019	ORGANOTIN PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C	PESTICIDE ORGANOSTANNIQUE LIQUIDE TOXIQUE, INFLAMMABLE, ayant un point d'éclair égal ou supérieur à 23 °C	PP	+	5		Not listed in NClass database GESAMP: See Organotin compounds	YES
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	PESTICIDE ORGANOSTANNIQUE LIQUIDE TOXIQUE	PP	+	5		Not listed in NClass database GESAMP: See Organotin compounds	YES
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	COMPOSÉ ORGANIQUE SOLIDE DE L'ÉTAIN, N.S.A.	PP	+	5		Not listed in NClass database GESAMP: See Organotin compounds	YES
3151	POLYHALOGENATED BIPHENYLS, LIQUID or POLYHALOGENATED TERPHENYLS, LIQUID	DIPHÉNYLES POLYHALOGÉNÉS LIQUIDES ou TERPHÉNYLES POLYHALOGÉNÉS LIQUIDES	PP	+	4		Not listed in NClass database	YES

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				A	B			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3152	POLYHALOGENATED BIPHENYLS, SOLID or POLYHALOGENATED TERPHENYLS, SOLID	DIPHÉNYLES POLYHALOGÉNÉS SOLIDES ou TERPHÉNYLES POLYHALOGÉNÉS SOLIDES	PP	+	4		Not listed in NClass database	YES
3155	PENTACHLOROPHENOL	PENTACHLOROPHÉNOL	PP	+	4	N, R50-53	Not listed in NClass database	YES
3242	AZODICARBONAMIDE	AZODICARBONAMIDE	P	?	?	N.C.		NO
3294	HYDROGEN CYANIDE, SOLUTION IN ALCOHOL with not more than 45% hydrogen cyanide	CYANURE D'HYDROGÈNE EN SOLUTION ALCOOLIQUE contenant au plus 45 % de cyanure d'hydrogène	P	0	4	N, R50-R53	See 1051	YES
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C	ACIDE PHÉNOXYACÉTIQUE, DÉRIVÉ PESTICIDE LIQUIDE, TOXIQUE, INFLAMMABLE, ayant un point d'éclair égal ou supérieur à 23 °C	P				Not listed in NClass database	NO (not all)
3408	LEAD PERCHLORATE, SOLUTION	PERCHLORATE DE PLOMB, EN SOLUTION	P	+	1	N, R50-R53	See UN 1470	NO
3413	POTASSIUM CYANIDE, SOLID	CYANURE DE POTASSIUM, SOLIDE	P	0	4	N, R50-53	See 1680	YES
3414	SODIUM CYANIDE, SOLUTION	CYANURE DE SODIUM, EN SOLUTION	P	0	4	N, R50-53	See 1689	YES
3415	SODIUM FLUORIDE, SOLUTION	FLUORURE DE SODIUM, EN SOLUTION	P	0	1	N.C.	See 1690	NO
3424	AMMONIUM DINITRO-o-CRESOLATE, SOLUTION	DINITRO-o-CRÉSATE D'AMMONIUM, EN SOLUTION	P	T	4		See 1843	YES

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3427	CHLOROBENZYL CHLORIDES, SOLID	CHLORURES DE CHLOROBENZYLE, SOLIDES	P	Z	(3)		See 2235	NO
3431	NITROBENZOTRI-FLUORIDES, SOLID	FLUORURES DE NITROBENZYLIDYNE, SOLIDES	P	Z	(3)		See 2306	NO
3432	POLY-CHLORINATED BIPHENYLS, SOLID	DIPHÉNYLES POLYCHLORÉS (PCB) SOLIDES	PP	+	4	N, R50-53	See 2315	YES
3441	CHLORODINITRO-BENZENES, SOLID	CHLORODINITROBENZÈNES SOLIDES	P	Z	4	N, R50-53	See 1577	YES
3442	DICHLORO-ANILINES, SOLID	DICHLORANILINES SOLIDES	P	Z	4	N, R50-53	See 1590	YES
3450	DIPHENYLCHLOROARSINE, SOLID	DIPHÉNYLCHLORARSINE SOLIDE	PP	+	(4)		See 1699	YES
3457	CHLORONITRO-TOLUENES, SOLID	CHLORONITROTOLUÈNES SOLIDES	P	Z	3		See 2433	NO