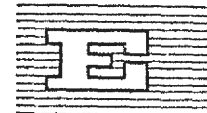


MAR 14 1974

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ECONOMIC
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E/CN.2/CONF.5/R.323/Add.1
19 February 1974

ENGLISH ONLY

COMMITTEE OF EXPERTS ON THE TRANSPORT
OF DANGEROUS GOODS

GROUP OF RAPORTEURS ON THE PACKING
OF DANGEROUS GOODS

Fifteenth session
February-March 1974

Geneva

LISTING AND CLASSIFICATION OF SUBSTANCES AND ARTICLES

Additional substances

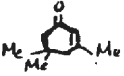
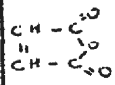
Proposal by the rapporteur of the United Kingdom

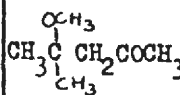
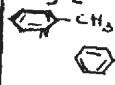
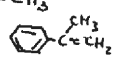
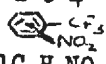
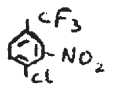
Addendum 1

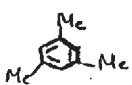
1. The rapporteur from the United Kingdom has sent the Secretariat the attached list based on that circulated as E/CN.2/CONF.5/R.323 showing the formulae, classification and hazard grouping of those substances which the United Kingdom considers should be inserted in the UN List of Dangerous Goods.
2. In view of the number of substances involved, it may not prove possible for the Rapporteurs to deal with the list in depth at their fifteenth session but it is suggested that they be requested to submit any observations in time for discussion at the following session so that the UN Committee of Experts can have before them a fully collated list consisting of the agreed entries as submitted by the various States and organizations.

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Acrylic Acid	$\text{CH}_2 = \text{CH}-\text{CO}_2\text{H}$	8 + 3	II
Allyl glycidyl ether	$\text{CH}_2 = \text{CHCH}_2\text{OCH}_2\text{CH}-\text{CH}_2$ 	3 + 6.1	III
2-Amino-4-chloro-phenol		6.1	II
Anisole		3	III
Benzonitrile	$\text{C}_6\text{H}_5\text{CN}$	6.1	II
Benzene Sulphonyl Chloride	$\text{C}_6\text{H}_5\text{SO}_2\text{Cl}$	8	III
Benzotrichloride	$\text{C}_6\text{H}_5-\text{CCl}_3$	8	II
Bromochlorodifluoromethane	BrClF_2C	2	
Butanal	$\text{CH}_3(\text{CH}_2)_2\text{CHO}$	See UN 3/1129, Butyraldehyde	
Butyl glycol acetate	$\text{C}_4\text{H}_9\text{OCH}_2\text{CH}_2\text{O}_2\text{CCH}_3$	3	III
Butyl methacrylate	$\text{CH}_2 = \text{C}(\text{CH}_3)\text{CO}_2\text{C}_4\text{H}_9$	3	II
Butyl phenols (liquid)	$\text{HOC}_6\text{H}_4 \cdot \text{C}_4\text{H}_9$	6.1	III
Butyl phenols (solid)	$\text{HOC}_6\text{H}_4\text{C}_4\text{H}_9$	6.1	III
Butyl toluene	$\text{CH}_3\text{C}_6\text{H}_4 \cdot \text{C}_4\text{H}_9$	3	III
5-tert-Butyl-1,3-xylene		3	III
Butyric acid ethyl ester	$\text{C}_3\text{H}_7\text{CO}_2\text{CH}_2\text{CH}_3$	See UN 3/1180, Ethyl Butyrate	
Chlorinated anthracene oil		6.1	II
Carbon dioxide (compressed)	CO_2	2	
Chloroacetaldehyde	CH_2ClCHO	6.1	II
p-Chloro-o-anisidine		6.1	II
Chlorobenzotrifluoride	$\text{Cl} \cdot \text{C}_6\text{H}_4\text{CF}_3$ 	3	II
p-Chlorobenzyl chloride		6.1	II
3-Chloro-4-methylphenyl-isocyanate		6.1	II
Chloronitroanilines	$\text{Cl}(\text{NO}_2)\text{C}_6\text{H}_3\text{NH}_2$	6.1	II
3-Chloroprop-1-ene	$\text{CH}_2 = \text{CHCH}_2\text{Cl}$	3	II
Chlorotoluenes	$\text{Cl} \cdot \text{C}_6\text{H}_4\text{CH}_3$	3	II
Chlorotoluidines	$\text{CH}_3 \cdot \text{C}_6\text{H}_3(\text{Cl})\text{NH}_2$	6.1	II
Chromium trifluoride	CrF_3	See UN 81756, Chromium fluoride	
Chromosulphuric acid	$\text{H}_2\text{SO}_4 + \text{Na}_2\text{Cr}_2\text{O}_7$	8	I
Cycloheptane	C_7H_{14}	3	II
Cycloheptene	C_7H_{12}	3	II
Cyclohexyl acetate	$\text{C}_6\text{H}_{11}\text{CO}_2\text{CH}_3$	3	III
Cyclopentanol	$\text{C}_5\text{H}_9\text{OH}$	3	III
Cyclopentanone	$\text{C}_5\text{H}_8\text{O}$	3	II
Cyclopentene	C_5H_8	3	II
n-Decane	$\text{C}_{10}\text{H}_{22}$	3	III

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
4-Decanol	$C_{10}H_{21}OH$	3	III
Dibromomethane	CH_2Br_2	6.1	III
1,2-Di-n-butoxyethane	$C_4H_9OCH_2CH_2OC_4H_9$	3	III
Di-(n-butyl)amine	$(C_4H_9)_2NH$	3	II
Octadiene	C_8H_{16}	3	II
Methyl dichloroacetate	$CH_3COCHCl_2$	8	III
Dichlorodifluoromethane +) mixture dichlorotetrafluoroethane) of	$CCl_2F_2 + C_2Cl_2F_4$	2	
Dichlorodifluoromethane +) mixture trichloromonofluoromethane) of	$CCl_2F_2 + CCl_3F$	2	
(sym) Dichlorodimethyl ether	$O(CH_2Cl)_2$	6.1 + 3	I
Dichlorophenols	$Cl_2C_6H_3OH$	6.1	III
Dichlorophenyl isocyanate	$Cl_2C_6H_3NCO$	6.1	II
Dicycloheptadiene	$C_{14}H_{20}$	3	II
1,2-Dimethoxyethane	$CH_3OCH_2CH_2OCH_3$	3	II
Dimethylacetamide	$CH_3CON(CH_3)_2$	6.1	III
N,N-Dimethylaniline	$C_6H_5N(CH_3)_2$	6.1	II
Dimethylcarbamoyl chloride	$(CH_3)_2NCOCl$	6.1	II
1,4-Dimethylcyclohexane	$CH_3-C_6H_{10}-CH_3$	3	II
Dimethylcyclohexylamine	$(CH_3)_2N-C_6H_{11}$	3	II
N,N-Dimethyl-2-amino-ethanol	$(CH_3)_2NCH_2CH_2OH$	3	II
N,N-Dimethylformamide	$H_2C=N(CH_3)_2$	6 + 3	II
Dimethyl-N-propylamine	$(CH_3)_2N-C_3H_7$	3	II
Dimethyl thiophosphoryl chloride	$(CH_3O)_2P(=S)Cl$	6.1	II
Diphenylmethane-4,4',-diisocyanate	$OCN.C_6H_4CH_2C_6H_4NCO$	6.1	III
Diphenyl-p-phenylenediamine 35% + phenyl-β-naphthylamine 65%	$(C_6H_5)_2NC_6H_4NH_2$ (35%)+ $C_{10}H_7NHC_6H_5$ (65%)	6.1	III
Dipropylene triamine	$H_2NC_3H_6NHC_3H_6NH_2$	8	II
Dithionites n.o.s.	various salts Ca	4.2	II
Ethylamine 50-70% Soln in water	$CH_3CH_2NH_2$	3	II

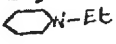
SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Ethyl amyl ketone	$\text{CH}_3\text{CH}_2\text{COCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$	3	III
N-Ethylaniline	$\text{C}_6\text{H}_5\text{NHCH}_2\text{CH}_3$	6.1	II
2-Ethylaniline	$\text{CH}_3\text{CH}_2 \cdot \text{C}_6\text{H}_4\text{NH}_2$	6.1	II
N-Ethylbenzylaniline	$\text{C}_6\text{H}_5\text{N}(\text{Et})\text{CH}_2\text{C}_6\text{H}_5$	6.1	II
2-Ethylbutanol	$\text{CH}_3\text{CH}_2\text{CH}(\text{Et})\text{CH}_2\text{OH}$	3	III
Ethylene chlorohydrin	$\text{CH}_2\text{ClCH}_2\text{OH}$	See UN 31135, 2-Chloroethanol	
2-Ethylhexyl acrylate	$\text{CH}_2 = \text{CHCO}_2\text{CH}_2\text{CH}(\text{Et})\text{C}_4\text{H}_9$	6.1	III
2-Ethylhexylamine	$\text{C}_4\text{H}_9\text{CH}(\text{Et})\text{CH}_2\text{NH}_2$	3	II
2-Ethylhexyl methacrylate	$\text{CH}_2\text{C}(\text{CH}_3)\text{CO}_2\text{C}_8\text{H}_{17}$	6.1	III
Ethyl methacrylate	$\text{CH}_2\text{C}(\text{CH}_3)\text{CO}_2\text{Et}$	3	II
Ferrous chloride	FeCl_2	8	III
Aluminium alkyl halides, in solution		4.2	II
Aluminium alkyl halides (pure)		4.2	I
n-Heptene	C_7H_{14}	3	II
Hexachlorobutadiene	$\text{Cl}_2\text{C}=\text{CCl} \cdot \text{ClC}=\text{CCl}_2$	6.1	II
Hexamethylenediamine (solid)	$\text{H}_2\text{N}(\text{CH}_2)_6\text{NH}_2$	8	II
Hexamethylenediisocyanate	$\text{OCN}(\text{CH}_2)_6\text{NCO}$	6.1	II
Hexamethylenetetramine	$(\text{CH}_2)_6\text{N}_4$	See UN 4.1/1328, Hexamine	
Hexanols	$\text{C}_6\text{H}_{13}\text{OH}$	3	III
Isobutyl methacrylate	$\text{CH}_2\text{C}(\text{CH}_3)\text{CO}_2\text{C}_4\text{H}_9$	3	II
Isobutyronitrile	$\text{CH}_3(\text{CH}_2)_2\text{CN}$	6.1 + 3	I
Isocyanatobenzotrifluoride	$\text{OCNC}_6\text{H}_4\text{CF}_3$	6.1	II
Isododecane (Pentamethylheptane)	$\text{C}_{12}\text{H}_{26}$	3	III
Isoheptene	C_7H_{14}	3	II
Isohexene	C_6H_{12}	3	II
Isophorone		6.1	III
Isophoronediamine		8	III
Isophoronediiisocyanate		6.1	II
Lead residues	Variable	6.1	III
Lead tetraacetate	$\text{Pb}(\text{CO}_2\text{CH}_3)_4$	6.1	III
Maleic acid	$\text{H}-\text{C}(\text{CO}_2\text{H})=\text{C}(\text{CO}_2\text{H})-\text{H}$	8.1	III
Maleic anhydride		6.1	III

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
4-Methoxy-4-methyl-pentan-2-one		3	III
N-Methyl aniline	$\text{CH}_3\text{NHC}_6\text{H}_5$	6.1	II
Methyl-n-butyl methacrylate ; solution	$\text{CH}_2\text{C}(\text{CH}_3)\text{CO}_2\text{C}_4\text{H}_9$	3.2 6.1	II III
Methyl chloroacetate	$\text{CH}_3\text{ClCO}_2\text{CH}_3$	6.1 + 3	II
Methyl cyclohexane	$\text{CH}_3\text{C}_6\text{H}_{11}$	3	II
Methyl cyclohexanone	$\text{CH}_3\text{C}_6\text{H}_{10}\text{CO}$	3	II
Methyl cyclopentane	$\text{CH}_3\text{C}_5\text{H}_9$	3	II
Methyl diphenylamine	$(\text{C}_6\text{H}_5)_2\text{NCH}_3$	6.1	III
Methylene-bis(4-phenylisocyanate)	$\text{CH}_2(\text{C}_6\text{H}_4\text{NCO})_2$	6.1	III
2-Methyl-5-ethyl pyridine	$\text{CH}_3(\text{C}_2\text{H}_5)\text{C}_5\text{H}_3\text{N}$	6.1	III
2-Methylfuran	$\text{C}_5\text{H}_6\text{O}$	3	II
5-Methylhexan-2-one	$(\text{CH}_3)_2\text{CHCH}_2\text{CH}_2\text{COCH}_3$	3	II
2-Picoline		3	II
α -Methylstyrene		3	II
Naphthalene (molten)		4.1	III
Nitrobenzenesulphonic acid	$\text{C}_6\text{H}_4\text{SO}_3\text{H}$	8	II
Nitrobenzotrifluoride		8	II
Nitrochlorobenzene	$\text{ClC}_6\text{H}_4\text{NO}_2$	See UN 6/1578, Chloro-nitrobenzenes	II
3-Nitro-4-chlorobenzotrifluoride		8	II
Nitrosylsulphuric acid	$\text{NO}_2\text{SO}_3\text{H}$	8	II
Pentan-2,4-dione	$\text{CH}_3\text{COCH}_2\text{COCH}_3$	3	III
Phenetidine	$\text{H}_2\text{NC}_6\text{H}_4\text{OEt}$	6.1	II I
Phenol (molten)	$\text{C}_6\text{H}_5\text{OH}$	6.1	II
Phenylenediamine 42% + } mixture Cumenediamine 58% } of	$\text{C}_6\text{H}_4(\text{NH}_2)_2 + (\text{CH}_3)_2\text{CHC}_6\text{H}_3(\text{NH}_2)_2$	8	II
N-Phenyl-naphthylamine	$\text{C}_{10}\text{H}_7\text{NHC}_6\text{H}_5$	β 6.1 α Non-hazardous (if free β)	β III

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Triisobutylphosphate in propanol	$(C_4H_9)_3PO_4$ in C_3H_7OH	3	II
Phosphorus oxychloride	$POCl_3$	See UN 8/1810, Phosphoryl chloride	chloride
Phosphorus sulphochloride	$PSCl_3$	8	II
Polychlorinated biphenyls	various	6.1	III
Self-igniting metal powders	Al, Mg, Zn	See UN 42/1383, Pyrophoric	metals
Sodium cuprocyanide (solid)	$NaCu(CN)_2$	6.1	I
Sodium cuprocyanide (sln)	$NaCu(CN)_2$	6.1	I
Sodium hydrosulphide	$NaSH$	4.2	II
Sulphamic acid	NH_2SO_3H	8	III
Aryl sulphonic acids	various	8	II
Terpene hydrocarbons	$(C_5H_8)_n$	3	III
Tetraethylenepentamine	$NH_2(CH_2CH_2NH)_3CH_2CH_2NH_2$	8	III
Trichlorobenzene, mixed isomers	$C_6H_3 \cdot Cl_3$	6.1	III
Trichlorobutene	$Cl_3C_4H_5$	6.1	II
Triethyl phosphite	$(EtO)_3P$	3	III
Triisobutylene	$C_{12}H_{24}$	3	II
1, 3, 5-Trimethylbenzene		3	II
Trimethylcyclohexylamine	$(CH_3)_3C_6H_8NH_2$	6.1	III
3,3,5-Trimethylhexamethylenediamine	$NH_2(CH_2)_2C(CH_3)_2CH_2CH(CH_3)CH_2NH_2$	8	III
Trimethylhexamethylenediisocyanate		6.1	II
Trimethyl phosphite	$(CH_3O)_3P$	3	II
Undecane	$CH_3(CH_2)_9CH_3$	3	III
Xylenols	$(CH_3)_2C_6H_3OH$	6.1	III
Zinc Chloride (anhydrous)	$ZnCl_2$	8	III

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Acetaldehyde oxime	CH_3CHNOH	3	II
Allyl acetate	$\text{CH}_2\text{CHCH}_2\text{CO}_2\text{CH}_3$	3 + 6.1	I
Allylamine	$\text{CH}_2\text{CHCH}_2\text{NH}_2$	3 + 6.1	I
Allyl ethyl ether	$\text{CH}_2\text{CHCH}_2\text{OCH}_2\text{CH}_3$	3 + 6.1	I
Allyl formate	$\text{HCO}_2\text{CH}_2\text{CHCH}_2$	3 + 6.1	I
Benzene thiol (Thiophenol)	$\text{C}_6\text{H}_5\text{SH}$	3	II
Benzotrifluoride	$\text{C}_6\text{H}_5\text{CF}_3$	3	II
2-Bromobutane	$\text{CH}_3\text{CHBrCH}_2\text{CH}_3$	3	II
1-Bromo-2,3-epoxypropane	$\text{CH}_2\text{BrCH}-\text{CH}_2$	3	II
2-Bromoethyl ethyl ether	$\text{BrCH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$	3	II
1-Bromo-3-methylbutane	$\text{BrCH}_2\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_3$	3	II
1-Bromo-2-methylpropane	$\text{BrCH}_2\text{CH}(\text{CH}_3)_2$	3	II
2-Bromo-2-methylpropane	$(\text{CH}_3)_3\text{CBr}$	3	II
2-Bromopentane	$\text{CH}_3(\text{CH}_2)_2\text{CHBrCH}_3$	3	II
1-Bromopropane	$\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$	3	II
2-Bromopropane	$\text{CH}_3\text{CHBrCH}_3$	3	II
3-Bromopropyne	$\text{HC}\equiv\text{CCH}_2\text{Br}$	3	II
Butanedione	$\text{CH}_3\text{COCOCH}_3$	3	II
Butane-1-thiol	$\text{C}_4\text{H}_9\text{SH}$	3	II
Butan-2-ol	$\text{CH}_3\text{CH}_2\text{CHOHCH}_3$	3	II
Butanone	$\text{C}_4\text{H}_8\text{O}$	See UN 3/1193, Ethyl methyl ketone	
But-1-ene-3-one	$\text{CH}_2=\text{CHCOCH}_3$	3	II
Butyl ethyl ether	$\text{C}_2\text{H}_5\text{OC}_4\text{H}_9$	3	II
Isobutyl formate	$\text{HCO}_2\text{C}_4\text{H}_9$	3	II
Butyl methyl ether	$\text{C}_4\text{H}_9\text{OCH}_3$	3	II
Butyl nitrite	$\text{CH}_3(\text{CH}_2)_3\text{ONO}$	3	II
Isobutyl propionate	$\text{C}_2\text{H}_5\text{CO}_2\text{C}_4\text{H}_9$	3	II
Butyl vinyl ether	$\text{CH}_2=\text{CHOC}_4\text{H}_9$	3	II
But-2-yne	$\text{CH}_3\text{C}\equiv\text{CCH}_3$	3	I
Isobutyraldehyde	$(\text{CH}_3)_2\text{CHCHO}$	3	II
Butyronitrile	$\text{CH}_3(\text{CH}_2)_2\text{CN}$	3 + 6.1	I
Butyryl chloride	$\text{C}_3\text{H}_7\text{COCl}$	3	II
Isobutyryl chloride	$(\text{CH}_3)_2\text{CHCOCl}$	3	II
1-Chlorobutane	$\text{C}_4\text{H}_9\text{Cl}$	See UN 3/1127, Butyl chloride	

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
2-Chlorobutane	$\text{CH}_3\text{CH}_2\text{CHClCH}_3$	3	II
1-Chloro-3-Methylbutane	$\text{CH}_2\text{ClCH}_2\text{CH}(\text{CH}_3)_2$	3	II
2-Chloro-2-methylbutane	$\text{CH}_3\text{CCl}(\text{CH}_3)\text{CH}_2\text{CH}_3$	3	II
Chloromethyl ethyl ether	$\text{CH}_2\text{ClOCH}_2\text{CH}_3$	3	I
Chloromethyl methyl ether	$\text{CH}_2\text{ClOCH}_3$	3	I
1-Chloromethylbutane	$\text{CH}_2\text{ClC}_4\text{H}_9$	See UN 3/1107, Amyl chloride	
1-Chloro-2-methylpropane	$\text{CH}_2\text{ClCH}(\text{CH}_3)_2$	3	II
2-Chloro-2-methylpropane	$\text{CH}_3\text{CCl}(\text{CH}_3)_2$	3	II
3-Chloro-2-methylprop-1-ene	$\text{CH}_2\text{ClC}(\text{CH}_3)=\text{CH}_2$	3	II
1-Chloropentane	$\text{C}_5\text{H}_{11}\text{Cl}$	See UN 3/1107, Amyl chloride	
1-Chloropropane	$\text{C}_3\text{H}_7\text{Cl}$	See UN 3/1278, Propyl chloride	
2-Chloropropane (isopropyl chloride)	$\text{CH}_3\text{CHClCH}_3$	3	I
Cyclohexene	C_6H_{10}	3	II
Cyclohexylamine	$\text{C}_6\text{H}_{11}\text{NH}_2$	3	II
Cyclooctatetraene	C_8H_8	3	II
Diallylamine	$(\text{CH}_2=\text{CHCH}_2)_2\text{NH}$	3 + 6.1	I
Diallylether	$(\text{CH}=\text{CHCH})_2\text{O}$	3 + 6.1	I
Diisobutene	C_8H_{16}	See UN 3/2050, Di-isobutylene	
Diisobutylamine	$(\text{C}_4\text{H}_9)_2\text{NH}$	3	II
1,1-Dichloroethane	CHCl_2CH_3	3	II
Ethyl mercaptan	$\text{CH}_3\text{CH}_2\text{SH}$	3	I
Propyl benzene	$\text{C}_3\text{H}_7\text{C}_6\text{H}_5$	3	II
4-Methylpentan-2-ol	$\text{CH}_3\text{CHOHCH}_2\text{CH}(\text{CH}_3)_2$	3	III
Diethyl carbonate	$(\text{C}_2\text{H}_5)_2\text{CO}_3$	3	II
α -Methyl valeraldehyde	$\text{CH}_3(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{CHO}$	3	II
α -Pinene	$\text{C}_{10}\text{H}_{16}$	3	II
Butylacrylate	$\text{C}_4\text{H}_9\text{CO}_2\text{CH}=\text{CH}_2$	3	II
Ethylene glycol monobutyl ether	$\text{C}_4\text{H}_9\text{OCH}_2\text{CH}_2\text{OH}$	3	III
γ -Picoline		3	II
Hex-1-ene	$\text{CH}_2=\text{CH}(\text{CH}_2)_3\text{CH}_3$	3	II
Isopentene	$(\text{CH}_3)_2\text{CHCH}=\text{CH}_2$	3	I
2-Methylbutan -2-ol	$\text{CH}_3\text{CH}(\text{CH}_3)\text{C}(\text{CH}_3)_2(\text{OH})$	See UN 3/1105, Amyl alcohols	

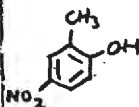
SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Naphtha (coal tar, crude and solvent)		3.	II
Petroleum raffinate		3.	II
Turpentine (sulphate wood)	$C_{10}H_{16}$	3.	III
1,2-Dichloropropane	$CH_2ClCHClCH_3$	3	II
1,2-Bis(dimethylamino)ethane	$(CH_3)_2NCH_2CH_2N(CH_3)_2$	3	III
1,1-Diethoxyethane	$(EtO)_2CHCH_3$	See UN 3/1088, Acetal	I
Diethoxymethane	$(EtO)_2CH_2$	3.	II
3,3-Diethoxypropane	$(EtO)_2CHCH_2CH_3$	3	II
Diethyl sulphide	Et_2S	3 + 6.1	II
2,3-Dihydropyran	C_5H_8O	3	II
1,1-Dimethoxyethane	$(CH_3O)_2CHCH_3$	3	II
Dimethoxymethane	$(CH_3O)_2CH_2$	See UN 3/1234, Methylal	II
2-Dimethylaminoacetonitrile	$(CH_3)_2NCH_2CN$	3 + 6.1	II
1,3-Dimethylbutylamine	$CH_3CH_2(CH_3)CH_2CH(CH_3)NH_2$	3.	II
Dimethyldiethoxysilane	$(CH_3)_2(EtO)_2Si$	3.	II
Dimethyl disulphide	CH_3SSCH_3	3	II
Dimethylhydrazine, symmetrical	$CH_3NHNHCH_3$	3 + 6.1	I
Dipropylamine	$(C_3H_7)_2NH$	3.	II
Diisopropylamine	$(C_3H_7)_2NH$	3	II
Dipropyl ether	$(C_3H_7)_2O$	3.	II
Ethyl isobutyrate	$(CH_3)_2CHCO_2Et$	3	II
Ethyl nitrite	C_2H_5ONO	2	
1-Ethyl piperidine		3	II
Fluorobenzene	C_6H_5F	3	II
2-Fluorotoluene		3	II
3-Fluorotoluene		3.	II

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Furan	C_4H_4O	3.	I
2-Iodobutane	$CH_3CH_2CHICH_3$	3	II
1-Iodo-2-methylpropane	$CH_2ICH(CH_3)_2$	3	II
2-Iodo-2-methylpropane	$CH_3CI(CH_3)_2$	3	II
1-Iodopropane	$CH_3CH_2CH_2I$	3.	II
2-Iodopropane	CH_3CHICH_3	3.	II
Methacraldehyde	$CH_2 = C(CH_3)CHO$	3. + 6.1	II
3-Methylbutane-1-thiol	$(CH_3)_2CCH_2CH_2SH$	See UN 3/1111, Amyl mercaptan	
2-Methylbutan-2-ol	$(CH_3)_2C(OH)CH_2CH_3$	} See UN 3/1105, Amyl alcohols	
3-Methylbutan-1-ol	$(CH_3)_2CCH_2CH_2OH$		
3-Methyl butan-2-one	$(CH_3)_2CCOCH_3$	3	II
Methyl tert. butylether	$CH_3OC_4H_9$	3	II
N-Methylformamide	$HCONHCH_3$	3.	II
2-Methylpentan-2-ol	$CH_3CH_2CH_2C(OH)(CH_3)_2$	3	II
4-Methylpentan-2-one	$CH_3COCH_2CH(CH_3)_2$	See UN 3/1245, Methyl isobutyl ketone	
1-Methylpiperidine		3.	II
2-Methylpropan-2-ol	$(CH_3)_3COH$	See UN 3/1122, tert-Butanol	
Methyl isovalerate	$(CH_3)_2CHCH_2CO_2CH_3$	3	II
Pentan-2-ol	$CH_3CH_2(OH)CH_3$	See UN 3/1105, Amyl alcohols	
Pentan-2-one	$CH_3CH_2CH_2CO_2CH_3$	See UN 3/1249, Methyl propyl ketone	
Pentan-3-one	$CH_3CH_2COCH_2CH_3$	See UN 3/1156, Diethyl ketone	
Isopentyl acetate	$(CH_3)_2CHCH_2CO_2CH_3$	See UN 3/1104, Amyl acetates	
Pentylamine	$CH_3(CH_2)_4NH_2$	See UN 3/1106, Amylamine	
Isopentylamine	$(CH_3)_2CHCH_2CH_2NH_2$	3	II
Pentyl nitrite	$CH_3(CH_2)_3CH_2NO_2$	See UN 3/1113, Amyl nitrite	
Isopentyl nitrite	$(CH_3)_2CHCH_2CH_2NO_2$	3	II
1-Phenylpropane-1,2-dione	$C_6H_5COCOCH_3$	3	II
Piperidine	$C_5H_{10}NH$	3.	II
Propane-1-thiol	$CH_3CH_2CH_2SH$	3.	II
Propane-2-thiol	$CH_3CHSHCH_3$	3	II
Propan-2-ol	$CH_3CHOHCH_3$	See UN 3/1219, Isopropanol	
Isopropenyl acetate	$CH_2 = C(CH_3)CO_2CH_3$	3	II
Propionitrile	CH_3CH_2CN	3 + 6.1	I

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Isopropylbutyrate	$(CH_3)_2CHCO_2(CH_2)_2CH_3$	3	II
Isopropylisobutyrate	$(CH_3)_2CHCO_2CH(CH_3)_2$	3	II
Isopropylchloroformate	$(CH_3)_2CO_2CCl$	3 + 6.1 + 8	I
Isopropyl formate	$(CH_3)_2CHO_2CH$	3	II
Isopropyl propionate	$(CH_3)_2CHCO_2CH_2CH_3$	3	II
1, 2, 3, 6-Tetrahydropyridine		3	II
Tetrahydrothiophene		3	II
Tetrapropylorthotitanate	$(C_3H_7)_4TiO_4$	3	II
Thioacetic acid	CH_3COSH	3	II
Thiophene		3	II
Triethyl borate	$B(OC_2H_5)_3$	3	II
Trimethyl borate	$B(OCH_3)_3$	3	II
Iso-Valeraldehyde	$(CH_3)_2CHCH_2CHO$	3	II
Carbonyl fluoride	COF_2	2	
Cyanogen chloride	$CNCl$	2	
Methanethiol	CH_3SH	2	
Sulphur tetrafluoride	SF_4	2	
Bromotrifluoroethylene	$BrFC=CF_2$	2	
Hexafluoroacetone	CF_3COCF_3	2	
Nitrogen trioxide	NO_3	2	
Octafluorobut-2-ene	$CF_3CF=CF_3$	2	
Chlorotetrafluoroethylene	$C_2H_2F_4Cl$	2	
Fluoromethane	CH_3F	2	

See UN 2/1064, Methylmercaptan

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Octafluoropropane	C_3F_8	2	
Potassium, metal	K	4.3	II
Ammonium nitrate (liquor)	NH_4NO_3 (soln)	5.1	II
Sodium chlorate (solution)	$NaClO_3$ (soln)	5.1	II
4-tertButyl toluene	$(CH_3)_3C-C_6H_4-CH_3$	6.1	III
Alkyl phenols	$R-C_6H_5-x \cdot OH$	6.1	III
Ortho-Anisidine	$H_2N-C_6H_4-OCH_3$	6.1	II
N,N-Diethyl aniline	$(C_2H_5)_2NC_6H_5$	6.1	II
Chloro-ortho-nitrotoluene	$CH_3-C_6H_4(NO_2)Cl$	6.1	II
Chromyl chloride	CrO_2Cl_2 See UN 8/1758, Chromium oxychloride		
Dibenzoyldichlorosilane	$(C_6H_5CH_2)_2Cl_2Si$	8	II
Ethyl phenyl dichlorosilane	$(Et)(C_6H_5)SiCl_2$	8	II
4-Hydroxybenzenesulphonic acid	$HO-C_6H_4-SO_3H$ See UN 8/1803, Phenolsulphonic acid		
Mercaptoacetic acid	$HSCH_2CO_2H$ See UN 8/1940, Thioglycolic acid		
Thioacetic acid	CH_3COSH	8	III
Methylphenyldichlorosilane	$(CH_3)(C_6H_5)SiCl_2$	8	II
Pentyltrichlorosilane	$C_5H_{11}SiCl_3$ See UN 8/1728, Amyltrichlorosilane		
Phosphoryl bromide	$POBr_3$ See UN 8/1939, Phosphorus oxybromide		
Pivaloyl chloride	$(CH_3)_3CCOCl$	8	II
Potassium hydrogen fluoride	KHF_2 See UN 8/1811, Potassium bifluoride		
Sodium hydrogen difluoride	$NaHF_2$	8	II
Stannic chloride pentahydrate	$SnCl_4 \cdot 5H_2O$	8	III
Disulphur dichloride	S_2Cl_2 See UN 8/1828, Sulphur chlorides		
Titanium trichloride	$TiCl_3$	8	III
Trichloroacetyl chloride	Cl_3CCOCl	8	II
Vanadium oxytrichloride	$VOCl_3$	8	II
Vanadium tetrachloride	VCl_4	8	II

SUBSTANCE	FORMULA	SUGGESTED CLASSIFICATION	SUGGESTED GROUPING
Diesel oil		See UN 3/1202	
Heating oil (Flash point above 55 °C)		3	III
Lithium alkyls, n o s		4.2	I
p-Nitro-o-cresol		6	II
Oxalic acid	HOOC-COOH	6	III
Phosphorus (molten)	P	4.2	I
Sulphur (molten)	S	4.1	III
Ammonium sulphide solns	(NH ₄) ₂ S	8	III
Propylenediamine	CH ₃ CH(NH ₂)CH ₂ NH ₂	3	II
Triethylene tetramine	H ₂ NCH ₂ (CH ₂ NHCH ₂) ₂ CH ₂ NH ₂	8	II
Tripropylamine	(C ₃ H ₇) ₃ N	3	II

UNITED NATIONS
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COMMITTEE OF EXPERTS ON THE TRANSPORT
OF DANGEROUS GOODS

GROUP OF RAPORTEURS ON THE PACKING
OF DANGEROUS GOODS

CLASSIFICATION

Enumeration of substances not included in the lists

Addendum 1 -- Revision 1

Revised proposals by the Rapporteur of the
United Kingdom

1. The Secretariat has received from the Rapporteur of the United Kingdom revised proposals for inclusion of new substances in the lists of the Recommendations.
2. These proposals are in three parts:
 - Annex A. Additional substances
 - Annex B. Comments on additional substances
 - Annex C. List of common names and cross references

Annex A - Additional substances

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mg/kg)	Class and subsidiary risk	Packaging Group
1	Acetaldehyde oxime	< 72		3	II
2	*Acrylic acid, inhibited ^{1/}	125	2520	3+8	II
3	Alkyl phenols, n.o.s. *			6	III
4	Allyl acetate	< 70	130	3+6	I
5	Allylamine	-20	110-280	3+6	I
6	Allyl ethyl ether	13	250	3+6	I
7	Allyl formate	< 72	124	3+6	I
8	*Allyl glycidyl ether	135-	1600	3	III
9	*Aluminium alkyl halides in solution			4.2	II
10	*Aluminium alkyl halides, pure			4.2	I
11	2-Amino-4-chlorophenol			6	III
12	Ammonium nitrate liquor (hot concentrated solution)			5.1	II
13	Ammonium sulphide solutions			8	III
14	o-Anisidine (o-methoxyaniline)			6	II
15	*Anisole (methyl phenyl ether)	125 oc	3700	3	III
16	*Aryl sulphonic acids, n.o.s.			8	II
17	Benzene sulphonyl chloride (benzosulpho-chloride)		1960	8	III
18	Benzenethiol (thiophenol) (phenyl mercaptan)	< 70		3	II
19	*Benzonitrile (phenyl cyanide)	167	305	6	II
20	*Benzotrichloride	260	6000	8	II
21	Benzotrifluoride	54		3+8	II
22	1,2-Bis(dimethylamino)ethane (tetramethyl-ethylenediamine)	< 73		3	II
23	2-Bromobutane (sec-butyl bromide)	< 72		3	II
24	1-Bromo-2,3-epoxypropane (epibromohydrin)	< 72		3	II
25	2-Bromoethyl ethyl ether	< 72		3	II
26	1-Bromo-3-methyl butane (iso-amyl bromide)	70		3	II
27	1-Bromo-2-methyl propane (iso-butyl bromide)	< 75		3	II

^{1/} Nonyl phenol and higher homologues may be regarded as non-dangerous.

* The Group decided at its sixteenth session to add the substance in the list.

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mg/kg)	Class and subsidiary risk	Packaging Group
28	2-Bromo-2-methyl propane (tert-butyl bromide)	<70		3	II
29	2-Bromopentane (sec-amyl bromide)	69		3	II
30	1-Bromopropane (propyl bromide)	<72		3	II
31	2-Bromopropane (isopropyl bromide)	<72		3	II
32	3-Bromopropyne (propargyl bromide)	60		3	II
33	Bromotrifluoroethylene			2	
34	Butanedione (diacetyl)	80	1500	3	II
35	Butane-1-thiol (n-butyl mercaptan)	71		3	II
36	Butyl acrylate	118	3750	3	III
37	Butyl ethyl ether (1-ethoxy butane)	40		3	II
38	Butyl glycol acetate			3	III
39	*Butyl methacrylate	126 oc	<20000	3	III
40	Butyl methyl ether (1-methoxybutane)	65		3	II
41	Butyl nitrite	50		3+6	II
42	*Butyl phenols (liquid)	235		6	III
43	*Butyl phenols (solid)			6	III
44	Butyl toluenes, n.o.s.			3	III
45	4-tert-Butyl toluene	152	1800	6	III
46	Butyl vinyl ether	30		3	II
47	5-tert-Butyl-1,3-xylene			3	III
48	Butyronitrile (propyl cyanide)	69	50-100	3+6	I
49	Butyryl chloride	<70		3+8	II
50	*Carbon dioxide, compressed			2	
51	Carbonyl fluoride		LD50 360	2+6	
52	*Chlorinated anthracene oil			6	II
53	*Chloroacetaldehyde	190	50-400	6	II
54	*p-Chloro-o-anisidine			6	III
55	*Chlorobenzotrifluorides	117		3+8	II

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mg/kg)	Class and subsidiary risk	Packaging Group
56	*p-Chlorobenzyl chloride		460	6	II
57	2-Chlorobutane (sec-butyl chloride)	< 71		3	II
58	1-Chloro-3-methyl butane (iso-amyl chloride)	< 70		3	II
59	2-Chloro-2-methyl butane (tert-amyl chloride)	< 72		3	II
60	Chloromethyl ethyl ether	< 66		3+6	I
61	Chloromethyl methyl ether	< 66		3+6	I
62	*3-Chloro-4-methylphenylisocyanate			6	II
63	1-Chloro-2-methyl propane (isobutyl chloride)	< 70		3	II
64	2-Chloro-2-methyl propane (tert-butyl chloride)	< 70		3	II
65	3-Chloro-2-methyl prop-1-ene (methallyl chloride)	-10		3	I
66	*Chloronitroanilines			6	III
67	Chloro-o-nitrotoluene (see "Allyl chloride")			6	III
68	2-Chloropropane (isopropyl chloride)	-26		3	I
69	Chlorotetrafluoroethylene			2	
70	*Chlorotoluenes	117-123		3	II
71	*Chlorotoluidines		1500	6	III
72	*Chromosulphuric acid			8	I
73	Cyanogen chloride			2+6	
74	*Cycloheptane	< 70		3	II
75	*Cycloheptene			3	II
76	Cyclohexene	< 20		3	II
77	*Cyclohexyl acetate	136		3	III
78	Cyclohexylamine	70	600(5%)	3	II
79	Cyclo-octatetraene	< 72		3	II
80	*Cyclopentanol	124		3	III
81	*Cyclopentanone	79	2950	3	II
82	*Cyclopentene	-20		3	II

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mt/kg)	Class and subsidiary risk	Packaging Group
83	*n-Decane	15		3	III
84	Diallylamine	<73	580	3+6	I
85	Diallyl ether (allyl ether)	20	250	3+6	I
86	Dibensyl dichlorosilane			8	II
87	Dibrom methane (methylene bromide)			6	III
88	1,2-Di-n-butoxyethane			3	III
89	*Di-(n-butyl)amine	106	500	3	II
90	Dichlorodifluoromethane and Dichlorotetrafluoroethane, mixture of			2	
91	Dichlorodifluoromethane and Trichloromonofluoromethane, mixture of			2	
92	*sym-Dichlorodimethyl ether	100	210	6+3	I
93	1,1-Dichloroethane (ethylidene chloride)	22	14100	3	II
94	Dichlorophenols (see "Chlorophenols")	237	500	6	III
95	*Dichlorophenyl isocyanates	254		6	II
96	*Dicycloheptadiene	-6°C		3	II
97	Diesel oil (flash point <141°F)			3	III
98	*Diethoxymethane	<70		3	II
99	3,3-Diethoxypropene	<73		3	II
100	N,N-Diethylaniline	185	2690	6	III
101	Diethyl carbonate	77		3	II
102	Diethyl sulphide (ethyl sulphide)	<72		3+6	II
103	2,3-Dihydropyran	4		3	II
104	Di-isobutylamine	69		3	II
105	1,1-Dimethoxyethane	<70	6500	3	II
106	*1,2-Dimethoxyethane	40°C		3	II
107	Dimethyl acetamide	152	3840	6	III
108	Dimethyl aminoacetonitrile	<73	50	3+6	II
109	*N,N-Dimethylaniline	145	1200-2000	6	III
110	1,3-Dimethylbutylamine (2-amino-4-methylpentane)	55		3	II

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mt/kg)	Class and subsidiary risk	Packaging Group
111	Dimethyl carbamoyl chloride			6	II
112	1,4-Dimethyl cyclohexane	52		3	II
113	Dimethyl cyclohexylamine	110	300	3	II
114	Dimethyl diethoxysilane	<73		3	II
115	Dimethyl disulphide	<70		3	II
116	N,N-Dimethyl formamide	135	1500	3	III
117	N,N'-Dimethyl hydrazine (dimethyl hydrazine, symmetrical)	<73	160	3+6	I
118	Dimethyl-N-propylamine			3	II
119	Dimethyl thiophosphoryl chloride	198		6	II
120	Diphenylmethane 4,4'-di-isocyanate (methylene bis-(4-phenylisocyanate)			6	III
121	Dipropylamine	45	300	3	II
122	Dipropyl ether (propyl ether)	<70		3	II
123	Dipropylene triamine	175		8	II
124	Dithionites, n.o.s.			4.2	II
125	Ethylamine 50-70% solution in water	<0	600	3+6	I
126	Ethyl amyl ketone	138		3	III
127	N-Ethyl aniline	177	1100	6	III
128	2-Ethyl aniline	185	1260	6	III
129	N-Ethyl-N-benzyl aniline			6	III
130	2-Ethyl-butanol	137oc		3	III
131	Ethylene glycol monobutyl ether	141	500	3	III
132	2-Ethyl hexylamine	140	450	3	III
133	Ethyl isobutyrate	<65		3	II
134	Ethyl mercaptan (ethane-thiol)	<70		3+6	I
135	Ethyl methacrylate	68	8400	3	II
136	Ethyl nitrite	-31		2+3+6	
137	Ethyl phenyl dichlorosilane			8	II
138	1-Ethyl piperidine (N-ethyl piperidine)	66		3	II
139	Ferrous chloride			8	III
140	Fluorobenzene	5		3	II

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mt/kg)	Class and subsidiary risk	Packaging Group
141	Fluoromethane (methyl fluoride)			2	
142	2-Fluorotoluene	<72		3	II
143	3-Fluorotoluene	<72		3	II
144	Fuel oil (flash point <141°F)(heating oil)			3	III
145	Furan	-32	250	3	I
146	n-Heptene	27		3	II
147	Hexachlorobutadiene		300	6	II
148	Hexafluoroacetone			2+6	
149	Hexamethylenediamine, solid			8	II
150	Hexamethylene di-isocyanate	266	710	6	II
151	Hexanols, n.o.s.	140		3	III
152	Hex-1-ene	<20		3	II
153	2-Iodobutane (sec-butyl iodide)	70		3	II
154	1-Iodo-2-methyl propane (isobutyl iodide)	72		3	II
155	2-Iodo-2-methyl propane (tert-butyl iodide)	<71		3	II
156	1-Iodopropane (n-propyl iodide)	<72		3	II
157	2-Iodopropane (iso-propyl iodide)	69-100		3	II
158	Isobutyl formate	70		3	II
159	Isobutyl methacrylate	120		3	III
160	Isobutyl propionate	<72		3	II
161	Isobutyronitrile (isopropyl cyanide)	<69	100	3+6	I
162	Isobutyryl chloride	<70		3+8	II
163	Isocyanatobenzotrifluoride			6	II
164	Isododecane (pentamethylheptane)	110		3	III
165	Isoheptene			3	II
166	Isohexene	-26		3	II
167	Isopentene			3	I
168	Isopentylamine (iso-amylamine)	48		3	II
169	Isopentyl nitrite (iso-amyl nitrite)	50		3	II
170	Isophorone	184	2330	6	III

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mt/kg)	Class and subsidiary risk	Packaging Group
171	Isophoronediamine			8	III
172	Isophoronedii-isocyanate			6	II
173	Isopropenyl acetate	60		3	II
174	Isopropyl butyrate	76		3	II
175	Isopropyl chloroformate	52	1070	3+6+8	I
176	Isopropyl formate	22		3	II
177	Isopropyl isobutyrate	< 70		3	II
178	Isopropyl proplonate	< 68		3	II
179	Isozalerdehyde (iso-amyl aldehyde)	< 67		3	II
180	Lead residues			6	III
181	Lead tetra-acetate			6	III
182	Lithium alkyls			4.2	I
183	Lithium alkyls solutions in inflammable liquids			3+4.2	I
184	Maleic acid		600-850	8	III
185	Maleic anhydride	215	850	8	III
186	Methacraldehyde (methacrolein)	28	111	3+6	II
187	4-Methoxy-4-methyl-pentan-2-one	141		3	III
188	N-Methyl aniline		300	6	III
189	3-Methylbutan-2-one (isopropyl methyl ketone)	< 72		3	II
190	Methyl tert-butyl ether	< 73		3	II
191	Methyl chloroacetate	90		3+6	II
192	Methyl cyclohexane	25		3	II
193	Methyl cyclohexanone	118		3	II
194	Methyl cyclopentane	< 20		3	II
195	Methyl dichloroacetate	176		8	III
196	N-Methylformamide	< 71		3	II
197	2-Methylfuran	- 22		3	II
198	5-Methylhexan-2-one (methyl iso-amyl ketone)	110 oc		3	II

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mt/kg)	Class and subsidiary risk	Packaging Group
199	Methyl isovalerate	<72		3	II
200	2-Methylpentan-2-ol	70		3	II
201	4-Methylpentan-2-ol	106		3	III
202	Methyl phenyl dichlorosilane			8	II
203	1-Methyl piperidine (N-methyl piperidine)	<73		3	II
204	alpha-Methylstyrene	110	4900	3	III
205	alpha-Methyl valeraldehyde	135		3	III
206	Naphtha, crude	107		3	II
207	Naphthalene, molten	174		4,1	III
208	Nitrobenzene sulphonic acid			8	II
209	Nitrobenzotrifluoride	214		8	II
210	3-Nitro-4-chlorobenzotrifluoride	265		8	II
211	p-Nitro-o-cresol			6	II
212	Nitrogen trioxide (dinitrogen trioxide)			2+6	
213	Nitrosyl sulphuric acid			8	II
214	Octadiene			3	II
215	Octafluorobut-2-ene			2	
216	Octafluoropropane			2	
217	Oxalates, water soluble			6	III
218	Oxalic acid			6	III
219	Pentan-2,4-dione (acetyl acetone)	93	1000	3	II
220	Petroleum raffinate	0-14		3	II
221	Phenetidine	240		6	III
222	Phenol, molten	172	300-500	6+8	II
223	1-Phenylpropane-1,2-dione	<69		3	II
224	Phosphorus, molten			4.2+6	I
225	Phosphorus sulphochloride			8	II
226	2-Picoline (2-methyl pyridine)	104	600-1400	3	II
227	4-Picoline (4-methyl pyridine)	104	800	3	II

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mt/kg)	Class and subsidiary risk	Packaging Group
228	alpha-Pinene	94		3	III
229	Piperidine	37	520	3	II
230	Pivaloyl chloride			8	II
231	Polychlorinated biphenyls (PCB)			9	III
232	Potassium metal			4.3	II
233	Propane-1-thiol (n-propyl mercaptan)	<65		3	II
234	Propane-2-thiol (iso-propyl mercaptan)	-5		3	II
235	Propionitrile (ethyl cyanide)	36	39	3+6	I
236	Propyl benzene	86		3	II
237	Propylene diamine	75	2230	3	II
238	Sodium chlorate solution			5.1	II
239	Sodium cuprocyanide, solid			6	I
240	Sodium cuprocyanide, solution			6	I
241	Sodium hydrogen difluoride (sodium bifluoride)		200	8+6	II
242	Sodium hydrosulphide		498	8	II
243	Stannic chloride, pentahydrate			8	III
244	Sulphamic acid			8	III
245	Sulphur molten	335		4.1	III
246	Sulphur tetrafluoride			2+6	
247	Terpene hydrocarbons, n.o.s.	90-120		3	III
248	Tetraethylene pentamine	310	3990	8	III
249	1,2,3,6-Tetrahydropyridine	61		3	II
250	Tetrahydrothiophen (tetramethylene sulphide)	<72		3	II
251	Tetrapropyl orthotitanate	<72		3	II
252	Thioacetic acid	<73	200	3+6	II
253	Thiophen	<30		3	II
254	Titanium trichloride			4.2+8	III
255	Trichloroacetyl chloride		600	8	II
256	Trichlorobenzene	230-235	756	6	III

No.	Substance	Flash point of (closed cup)	LD50 oral rat (mt/kg)	Class and subsidiary risk	Packaging Group
257	Trichlorobutene			6	III
258	Triethyl borate	52		3	II
259	Triethyl phosphite	130		3	III
260	Triethylene tetramine	275	4340	8	II
261	Tri-isobutylene	50-114		3	II
262	Tri-isobutyl phosphate in propenal	59		3	II
263	1,3,5-Trimethyl benzene (mesitylene)	112		3	III
264	Trimethyl borate	< 80		3	II
265	Trimethyl cyclohexylamine			6	III
266	3,3,5-Trimethylhexamethylenediamine			8	III
267	Trimethylhexamethylene di-isocyanate	307		6	II
268	Trimethyl phosphite	120		3	III
269	Tripropylamine	105	96(10%)	3+6	II
270	Turpentine (sulphate wood)	95		3	III
271	Undecane	149 oc		3	III
272	Vanadium oxytrichloride		140	8+6	I
273	Vanadium tetrachloride		160	8+6	I
274	Xylenols		150-600	6	III
275	Zinc chloride, anhydrous			8	III

Annex B - Comments on additional substances

Acrylic acid	- class 3, with class 8 label. Flammability has precedence in UN list. Disagree with French suggestion for class 6, class 8 label covers skin corrosion hazard
Alkyl phenols	- higher homologues not hazardous
Allylamine	- class 8 label not necessary
Allyl glycidyl ether	- toxicity too low for additional label
Aluminium alkyl halide solution	- should concentration limit be specified? does it apply to non-flammable solvent?
2-amino-4-chlorophenol	- toxicity thought to be within group III criteria
<u>o</u> -anisidine	- skin absorption hazard
Benzenesulphonyl chloride	- not hydrolysed to HCl by cold water
Benzotrifluoride	- suspect hydrolysis with water
Bromochlorofluoromethane	- UN No. 2/1974
Butanedione	- not sufficiently toxic for class 6 label
Butan-2-ol	- UN No. 3/1121 sec-butanol
But-1-ene-3-one	- UN No. 3/1251 methyl vinyl ketone
Butyl acrylate	- not sufficiently toxic for group II
Butyl glycol acetate	- could not find the flashpoint
Butyl methacrylate	- not sufficiently toxic for group II
Butyl nitrite	- toxic hazard
Butyl toluene	- could not find the flashpoint
4- <u>tert</u> -butyl toluene	- group III oral toxicity, skin irritation
5- <u>tert</u> -butyl-1, 3-xylene	- flashpoint unknown
But-2-yne	- UN No. 3/1144 crotonylene
Butyryl chloride	- should have class 8 label because it is easily hydrolysed to HCl
Carbonyl fluoride	- toxic, class 6.1 label
Chlorinated anthracene oil	- no evidence but suspect

Chloroacetaldehyde	- strong lachrymator
<u>p</u> -chloro- <u>o</u> -anisidine	- toxicity consider to be within group III
Chlorobenzotrifluoride	- suspect hydrolysis in water
Chloromethyl ethyl ether) Chloromethyl methyl ether)	- class 6.1 label because of suspect carcinogenicity
Chloronitroanilines	- no data supporting group II
Chloro- <u>o</u> -nitrotoluene	- no data supporting group II
3-chloroprop-1-ene	- UN No. 3/1100 allyl chloride
Chlorotoluene	- LD 50 is the minimum toxic dose
Chlorotoluidine	- no data supporting group II
Chlorotrifluoroethane	- already covered by UN No. 2/1983
Chromosulphuric acid	- strongly oxidizing, dehydrating acid
Cyanogen chloride	- is a gas
Cyclohexylamine	- amines with similar hazard already in the list do not have a subsidiary label
n-decane	- flashpoint 115°F
4-decanol	- flashpoint 180°F
Diallylamine	- class 8 label not necessary
1, 2-di- <u>n</u> -butoxyethane	- no flashpoint data
Dichlorodifluoromethane mixtures	- is it necessary to list them?
<u>sym</u> -dichlorodimethyl ether	- class 6 because toxicity is a serious hazard
1, 2-dichloropropane	- UN No. 3/1279 propylene dichloride
Diesel oil	- should it go in as synonym for gas oil 3/1202?
3, 3-diethoxypropene	- not 'ane'
N,N-diethylaniline	- evidence does not support group II
Diethyl sulphide	- no data but high toxicity suspected
Difluoroethane	- covered by UN No. 2/1030
Di-iso-propylamine	- UN No. 3/1158

Dimethyl acetamide	- skin irritant
N-N-dimethylaminoethanol	- UN No. 3/2051
N,N-dimethylaniline	- evidence does not support group II
Dimethylformamide	- not very toxic but if not in class 3 would justify class 6.1 group III
Dimethyl thiophosphoryl chloride	- no toxicity data but suspect could be more serious than corrosivity
Diphenyl-p-phenylenediamine + Phenyl naphthylamine	- not sufficiently toxic
Ethylamine solution	- class 8 label not necessary, but group I because of high vapour pressure and toxicity
N-ethylaniline	- evidence does not support group II
2-ethylaniline	- evidence does not support group II
N-ethyl-N-benzyl aniline	- evidence does not support group II
Ethylene glycol monobutyl ether	- not sufficiently toxic for label
2-ethyl hexyl acrylate	- not sufficiently toxic for control
2-ethyl hexylamine	- if not classified as class 3, would justify class 8 group III
2-ethyl hexyl methacrylate	- not sufficiently toxic for control
Ethyl mercaptan	- class 6 label due to high toxicity
Ethyl nitrite	- very hazardous
Ferrous chloride	- suspect some corrosive effect
Fuel oil	- should it be a synonym under gas oil?
Furan	- group I, toxic label not necessary
Hexachlorobutadiene	- no data, structure suggests toxicity
Hexafluoroacetone	- toxicity justifies class 6 label
Hexamethylenediamine, solid	- data for packaging group required
Isobutyl methacrylate	- toxicity too low for group II
Isobutyraldehyde	- UN No. 3/2045
Isobutyronitrile	- flammability is given precedence

Isobutyryl chloride	- class 8 label, because it is easily hydrolysed to HCl
Isocyanatobenzotrifluoride	- no data, suspect it is toxic
Isophorone	- class 6 group III because of irritant properties
Lead residues	- is the proposed entry too vague?
Lithium alkyl solutions in inflammable solvent	- should be added
Maleic anhydride	- class 6 does not provide appropriate warning
N-methylaniline	- toxic data do not support group II
Methyl <u>n</u> -butyl methacrylate solution	- hazard due to solvent only
Methyl chloroacetate	- class 3 given precedence
Methyl cyclohexane	- was UN No. 3/1240 in 1964 edition
Methyl cyclohexanone	- group II because of irritant properties
Methyl cyclopentane	- was UN No. 3/1241 in 1964 edition
N-methyldiphenylamine	- not sufficiently toxic for control
2-methyl-5-ethylpyridine	- not sufficiently toxic for control
alpha-methylstyrene	- not sufficiently toxic for group II
alpha-methylvaleraldehyde	- not sufficiently toxic for group II
Naphtha	- coal tar oil solvent are UN Nos. 3/1158 and 3/1256
Nitrogen trioxide	- highly toxic
Nitrosyl sulphuric acid	- might justify group I
Octadiene	- flashpoint unknown
Octafluorobut-2-ene	- b. pt. 1.2°C at 760 mm
Oxalic acid	- was UN No. 6/1666 in 1964 edition, not sufficiently corrosive for class 8
Oxalates	- low solubility salts are not sufficiently hazardous for control, in 1964 edition as 6/1667

Pentan-2,4-dione	- group II because of slight toxicity, but class 6 label not necessary
Phenol, molten	- class 8 label justified
Phenylenediamine/ cumenediamine	- controlled by phenylenediamine entry 6/1673
N-phenylnaphthylamine	- not sufficiently dangerous for control
Phosphorus, molten	- class 6 label as in present entry
Picolines (methyl pyridines)	- group II because of toxicity
alpha-pinene	- toxicity too low for group II
Polychlorinated biphenyls	- environmental hazard
Propylenediamine	- subsidiary label, as for other amines
Sodium chlorate solution	- not sufficiently toxic for label
Sodium hydrogen fluoride	- the potassium salt has a class 6 label
Sodium hydrosulphide	- sulphides are corrosive
Sulphamic acid	- a strong acid
Sulphur tetrafluoride	- class 6 label, i.e. poison gas label
Thioacetic acid	- toxic label
Trichloroacetylchloride	- not exceptionally hazardous
Trichlorobutene	- not toxic enough for group II
Triethylene tetramine	- not very toxic
1,3,5,-trimethylbenzene	- flashpoint sufficiently high for group III
Trimethylcyclohexylamine 3,3,5-trimethylhexamethylene diamine	- flashpoint must be taken into account, not found
Trimethylphosphite	- toxicity not high enough for group II
Tripropylamine	- toxic label justified
Undecane	- closed cup flashpoint not known
Vanadium oxytrichloride	- highly toxic
Xylenols	- group III considered adequate
Amines	- no comment has been made for the individual amines (unless specially hazardous), the question of subsidiary labels should be considered for this group as a whole

Annex C - List of common names and cross references

COMMON NAME	CROSS REFERENCE
Acetyl acetone	See Pentan-2,4-dione
Allyl ether	See Diallyl ether
2-Amino-4-methylpentane	See 1,3-Dimethylbutylamine
sec-Amyl bromide	See 2-Bromopentane
tert-Amyl chloride	See 2-Chloro-2-methylbutane
Benzosulphochloride	See Benzene sulphonyl chloride
Butan-2-ol	See sec-Butanol, UN 3/1121/7
But-1-ene-3-one	See Methyl vinyl ketone, UN 3/1251/7
sec-Butyl bromide	See 2-Bromobutane
tert-Butyl bromide	See 2-Bromo-2-methylpropane
sec-Butyl chloride	See 2-Chlorobutane
tert-Butyl chloride	See 2-Chloro-2-methylpropane
sec-Butyl iodide	See 2-Iodobutane
tert-Butyl iodide	See 2-Iodo-2-methylpropane
n-Butyl mercaptan	See Butane-1-thiol
But-2-yne	See Crotonylene, UN 3/1144/7
3-Chloroprop-1-ene	See Allyl chloride, UN 3/1100/7
Diacetyl	See Butanedione
1,2-Dichloropropane	See Propylene dichloride, UN 3/1279/7
Epibromohydrin	See 1-Bromo-2,3-epoxypropane
Ethanethiol	See Ethyl mercaptan
1-Ethoxybutane	See Butyl ethyl ether
Ethyl cyanide	See Propionitrile
Ethylidene chloride	See 1,1-Dichloroethane
N-Ethylpiperidine	See 1-Ethylpiperidine
Heating oil	See Fuel oil
Isoamyl bromide	See 1-Bromo-3-methylbutane
Isoamyl chloride	See 1-Chloro-3-methylbutane
Isoamyl nitrite	See Isopentyl nitrite
Isoamylaldehyde	See Isovaleraldehyde
Isoamylamine	See Isopentylamine
Isobutyl bromide	See 1-Bromo-2-methylpropane
Isobutyl chloride	See 1-Chloro-2-methylpropane
Isobutyl iodide	See 1-Iodo-2-methylpropane
Isopropyl bromide	See 2-Bromopropane

Isopropyl chloride	See 2-Chloropropane
Isopropyl iodide	See 2-Iodopropane
Isopropyl cyanide	See Isobutyronitrile
Isopropyl mercaptan	See Propane-2-thiol
Isopropyl methyl ketone	See 3-Methylbutan-2-one
Mesitylene	See 1,3,5-Trimethylbenzene
Methacrolein	See Methacraldehyde
Methallyl chloride	See 3-Chloro-2-methylprop-1-ene
1-Methoxybutane	See Butyl methyl ether
Methylene bromide	See Dibromomethane
Methyl fluoride	See Fluoromethane
Methyl isoamyl ketone	See 5-Methylhexan-2-one
N-Methylpiperidine	See 1-Methylpiperidine
Pentamethylheptane	See Isododecane
Phenyl cyanide	See Benzonitrile
Propargyl bromide	See 3-Bromopropyne
n-Propyl bromide	* See 1-Bromopropane
Propyl cyanide	See Butyronitrile
Propyl ether	See Dipropyl ether
n-Propyl iodide	See 1-Iodopropane
n-Propyl mercaptan	See Propane-1-thiol
Tetramethylene sulphide	See Tetrahydrothiophen
Thiophenol	See Benzenethiol
