ANNEX I

	List of Hazardous Substances	CAS Number
*	2,2-Diphenyl-2-hydroxyacetic acid	76-93-7
	Acetic anhydride	108-24-7
*	Alkyl (Me, Et, n-Pr or i-Pr) phosphonyldifluorides, which include but are not limited to — DF: Methylphosphonyldifluoride	676-99-3
	All PIC (Prior Informed Consent) chemicals controlled under the Rotterdam Convention and subject to PIC procedure	-
*	Amiton: O,O-Diethyl S-[2-(diethylamino)ethyl] phosphorothiolate and corresponding alkylated or protonated salts	78-53-5
	Ammonia	7664-41-7
*	Arsenic trichloride	7784-34-1
	Arsine	7784-42-1
	Boron tribromide	10294-33-4
	Boron trichloride	10294-34-5
	Boron trifluoride	7637-07-2; 13319-75-0
*	BZ: 3-Quinuclidinyl benzilate	6581-06-2
*	Carbamates (quaternaries and bisquaternaries of dimethylcarbamoyloxypyridines) as defined in the Second Schedule of the Environmental Protection And Management Act	77104-62-2; 77104-00-8
	Carbon monoxide	630-08-0
*	Chemicals, except for those listed in Schedule 1 of the Annex on Chemicals of the Chemical Weapons Convention, containing a phosphorus atom to which is bonded one methyl, ethyl or propyl (normal or iso) group but not further carbon atoms, which include but are not limited to — Methylphosphonyl dichloride Dimethyl methylphosphonate Exemption: Fonofos: O-Ethyl S-phenyl ethylphosphonothiolothionate (CAS No.: 944-22-9)	676-97-1; 756-79-6; 78-38-6; 84962-98-1; 68957-94-8; 41203-81-0; 3001-98-7; 993-13-5; 84402-58-4; 4708-04-7; 849-29-6; 676-83-5; 683-08-9; 18755-43-6; 1832-53-7; 1066-50-8; 4672-38-2; 616-52-4; 15715-41-0
***	Chlorpyrifos	2921-88-2
	Chlorinated hydrocarbons used as pesticides	-
	Chlorine	7782-50-5
	Chlorine trifluoride	7790-91-2

	Chlorobenzenes as defined in the Second Schedule of the Environmental Protection And Management Act	-
	Chlorophenols as defined in the Second Schedule of the Environmental Protection And Management Act	-
	Chloropicrin	76-06-2
*	Chlorosarin: O-Isopropyl methylphosphonochloridate	1445-76-7
*	Chlorosoman: O-Pinacolyl methylphosphonochloridate	7040-57-5
*	Cyanogen chloride	506-77-4
**	Dechlorane Plus	13560-89-9
*	Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr or i-Pr)-phosphoramidates	-
	Diborane	19287-45-7
	Dibromochloropropane	96-12-8
	Dicofol	115-32-2
*	Diethyl phosphite	762-04-9
	Dinosam; its compounds with a metal or a base	4097-36-3
	Drazoxolon	5707-69-7
	Endothal; its salts	145-73-3; 28874-46-6; 129-67-9
	Ethylene imine	151-56-4
	Fluorine	7782-41-4
	Formetanate	22259-30-9
	Germane	7782-65-2
	Hexabromocyclododecane	3194-55-6; 25637-99-4; 134237-50-6; 134237-51-7; 134237-52-8
*	HN1: Bis(2-chloroethyl)ethylamine	538-07-8
*	HN2: Bis(2-chloroethyl)methylamine	51-75-2
*	HN3: Tris(2-chloroethyl)amine	555-77-1
	Hydrochloric acid and Hydrogen chloride (Gas)	7647-01-0
	Hydrogen cyanide; Hydrocyanic acid	74-90-8
	Hydrogen fluoride (Gas)	7664-39-3
	Hydrogen selenide	7783-07-5
*	Lewisite 1: 2-Chlorovinyldichloroarsine	541-25-3
*	Lewisite 2: Bis(2-chlorovinyl)chloroarsine	40334-69-8
*	Lewisite 3: Tris(2-chlorovinyl)arsine	40334-70-1
***	Medium-chain chlorinated paraffins (chain lengths at least C14 but not exceeding C17) (MCCPs)	915-934-2, 61788-76-9, 68920-70-7, 84082-38-2, 84776-06-7, 84776-07-8, 85049-26-9, 85422-92-0, 85535-85-9, 85536-22-7, 85681-73-8, 97553-43-0, 97659-46-6, 198840-65-2, 1372804-76-6
	Mercury and its compounds	7439-97-6; 592-04-1; 7487-94-7; 115-09-3; 10124-48-8; 7774-29-0; 1335-31-5; 3076-

		91-3; 7783-35-9; 21908-53-2; 10045-94-0; 7783-34-8; 7789-47-1; 129-16-8; 7783-33-7; 304656-34-6; 73491-34-6; 10112-91-1; 7782-86-7; 1344-48-5; 592-85-8; 13257-51-7; 14836-60-3; 10415-75-5; 54-64-8
*	Methyl-(bis(diethylamino)methylene)phosphonamidofluoridate	2387496-14-0
	Methyl bromide	74-83-9
	Methyl chloride	74-87-3
*	N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts	100-38-9; 108-02-1; 13242-44-9; 1942-52-5
*	N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-chlorides and corresponding protonated salts	4584-46-7; 869-24-9; 4261-68-1
	Niclofolan	10331-57-4
	Nicotine sulphate	65-30-5
	Nitric oxide	10102-43-9
	Nitrogen trifluoride	7783-54-2
*	O-Alkyl (≤C_{10}, incl. cycloalkyl) alkyl (Me, Et, n-Pr or i-Pr)-phosphonofluoridates, which include but are not limited to — Sarin: O-Isopropyl methylphosphonofluoridate Soman: O-Pinacolyl methylphosphonofluoridate	107-44-8; 96-64-0; 673-97-2; 329-99-7; 352-63-6; 7284-84-6; 1401191-54-5; 108202-65-9; 1189-87-3; 2053-81-8
*	O-alkyl (H or ≤C_{10}, incl. cycloalkyl) N-(1-(dialkyl(≤C_{10}, incl. cycloalkyl)amino))alkylidene(H or ≤C_{10}, incl. cycloalkyl) phosphoramidofluoridates and corresponding alkylated or protonated salts, which include but are not limited to — O-n-Decyl N-(1-(di-n-decylamino)-n-decylidene)phosphoramidofluoridate Methyl (1-(diethylamino)ethylidene) phosphoramidofluoridate Ethyl (1-(diethylamino)ethylidene) phosphoramidofluoridate	2387496-00-4; 2387496-04-8; 2387496-06-0; 2723465-87-8
*	O-Alkyl (H or ≤C_{10}, incl. cycloalkyl) O-2-dialkyl (Me, Et, n-Pr or i-Pr)-aminoethyl alkyl (Me, Et, n-Pr or i-Pr) phosphonites and corresponding alkylated or protonated salts, which include but are not limited to — QL: O-Ethyl O-2-diisopropylaminoethyl methylphosphonite	57856-11-8
*	O-Alkyl (H or ≤C_{10}, incl. cycloalkyl) S-2-dialkyl (Me, Et, n-Pr or i-Pr)-aminoethyl alkyl (Me, Et, n-Pr or i-Pr) phosphonothiolates and corresponding alkylated or protonated salts, which include but are not limited to — VX: O-Ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate	50782-69-9; 468712-10-9; 21738-25-0; 21770-86-5; 159939-87-4; 1276665-26-9; 52364-45-1; 73207-98-4
	Oleum and Sulphuric acid	8014-95-7; 7664-93-9
*	P-alkyl (H or ≤C10, incl. cycloalkyl) N-(1-(dialkyl(≤C10, incl. cycloalkyl)amino))alkylidene(H or ≤C10, incl.	2387495-99-8; 2387496-12-8

	cycloalkyl) phosphonamidic fluorides and corresponding alkylated or protonated salts, which include but are not limited to — N-(1-(di-n-decylamino)-n-decylidene)-P-decylphosphonamidic fluoride Methyl-(1-(diethylamino)ethylidene) phosphonamidofluoridate	
***	Perfluorononanoic acid (PFNA) and its salts	375-95-1, 4149-60-4, 21049-39-8
***	Perfluorodecanoic acid (PFDA) and its salts	335-76-2, 3830-45-3, 3108-42-7
***	Perfluoroundecylic acid (PFUnDA) and its salts	2058-94-8
***	Perfluorododecanoic acid (PFDoDA) and its salts	307-55-1
***	Perfluorotridecanoic acid (PFTrDA) and its salts	72629-94-8
***	Perfluorotetradecanoic acid (PFTDA) and its salts	376-06-7
***	Perfluoropentadecanoic acid (PFPeDA) and its salts	141074-63-7
***	Perfluorohexadecanoic acid (PFHxDA) and its salts	67905-19-5
***	Perfluoroheptadecanoic acid (PFHpDA) and its salts	57475-95-3
***	Perfluorooctadecanoic acid (PFODA) and its salts	16517-11-6
***	Perfluorononadecanoic acid (PDNDA) and its salts	133921-38-7
***	Perfluoroeicosanoic acid and its salts	68310-12-3
***	Perfluoroheneicosanoic acid and its salts	2920913-30-8
***	Long-chain perfluorocarboxylic acids (LC-PFCAs) related compounds	65530-63-4, 65530-64-5, 65530-70-3, 65530-71-4, 65530-72-5, 65530-74-7, 68412-68-0, 68412-69-1, 74499-44-8, 1895-26-7, 63295-27-2, 63295-28-3, 94158-70-0, 94200-42-7, 94200-43-8, 94200-46-1, 94200-47-2, 94200-48-3, 94200-50-7, 94200-51-8, 2043-53-0, 2043-54-1, 30046-31-2, 65510-55-6, 65510-56-7, 68188-12-5, 68390-33-0, 307-50-6, 307-60-8, 307-63-1, 335-79-5, 376-04-5, 423-62-1, 558-97-4, 677-93-0, 3248-61-1, 3248-63-3, 90622-71-2, 65530-69-0, 65530-83-8, 68187-25-7, 68187-47-3, 678-39-7, 87017-97-8, 865-86-1, 1545-59-1, 39239-77-5, 176676-70-3, 60699-51-6, 65104-67-8, 65104-65-6, 68391-08-2, 65545-80-4, 71002-41-0, 123171-68-6, 16083-87-7, 52956-82-8, 65104-45-2, 74256-14-7, 74256-15-8, 1996-88-9, 2144-54-9, 6014-75-1, 4980-53-4, 59778-97-1, 65104-66-7, 17741-60-5, 85631-54-5, 65530-66-7, 65605-70-1, 65530-59-8, 65605-56-3, 65605-57-4, 110053-43-5, 148878-17-5, 65530-65-6, 125768-41-4, 220237-52-5, 94095-37-1, 71608-61-2, 253682-98-3, 253682-97-2, 70983-60-7, 98219-29-5, 115340-82-4, 92129-34-5,

		115535-36-9, 127133-57-7, 145477-02-7, 153325-45-2, 65530-57-6, 71356-38-2, 68140-21-6, 68516-17-6, 59493-72-0, 84238-62-0, 68891-05-4, 86508-42-1, 148240-84-0, 277752-44-0, 333784-46-6, 333784-44-4, 174125-96-3, 70983-59-4, 182700-77-2, 65530-61-2, 70969-47-0, 68333-92-6, 91032-01-8, 15811-52-6, 16486-96-7,18024-09-4, 68015-87-2, 68025-62-7, 3658-63-7, 3793-74-6, 72968-38-8, 93062-53-4, 93776-16-0, 93776-17-1, 94159-76-9, 94159-79-2, 94159-80-5, 94159-82-7, 94159-83-8, 93776-12-6, 93776-13-7, 93776-15-9, 90622-99-4, 71356-38-2, 85681-64-7, 68155-54-4, 459415-06-6, 464178-90-3, 1246542-93-7, 93776-00-2, 70887-84-2, 191852-87-6, 70887-94-4, 115592-83-1, 144031-01-6, 65605-58-5, 65636-35-3, 125328-29-2, 129783-45-5, 34395-24-9, 119973-85-2, 178233-67-5, 65605-59-6, 65605-60-9, 68239-43-0, 150135-57-2, 203743-03-7, 196316-34-4, 1094598-90-9, 325966-78-7, 119973-84-1, 220713-37-1, 374928-93-5, 97136-02-2, 101896-32-6, 220713-74-6, 220713-85-9, 374928-92-4, 459415-06-6, 524729-93-9, 500701-62-2, 68891-05-4, 376364-33-9, 135228-60-3, 144468-32-6, 118102-37-7, 332076-28-5, 332076-33-2, 332076-34-3, 68990-40-9, 118102-38-8, 253873-70-0, 329201-80-1, 428842-38-0, 178535-23-4, 126927-97-7, 70969-47-0, 113089-67-1, 185630-70-0, 65530-58-7
**	Perfluorohexane sulfonic acid (PFHxS), salts and related compounds	355-46-4, 93572-72-6, 160305-97-5, 254889-10-6, 3871-99-6, 38850-52-1, 38850-58-7, 52166-82-2, 55120-77-9, 67584-53-6, 68259-08-5, 68299-21-8, 68391-09-3, 68555-70-4, 68815-72-5, 70248-52-1, 73772-32-4, 76848-68-5, 80621-17-6, 81190-38-7, 82382-12-5, 85665-66-3, 68957-58-4, 70225-16-0, 1000597-52-3, 108427-54-9, 108427-55-0, 1187817-57-7, 1310480-24-0, 1310480-27-3, 1310480-28-4, 144116-10-9, 1462414-59-0, 153443-35-7, 189274-31-5, 202189-84-2, 213740-81-9, 2267980-92-5, 341035-71-0, 341548-85-4, 350836-93-0, 38850-51-0, 41184-65-0, 41242-12-0, 421555-73-9, 421555-74-0, 425670-70-8, 70136-72-0, 72033-41-1, 910606-39-2, 92011-17-1, 911027-68-4, 866621-50-3, 928049-42-7, 148240-80-6, 161074-58-4,

		306974-63-0, 68081-83-4, 68957-53-9, 86525-30-6, 115416-67-6, 147029-28-5, 149652-30-2, 76848-59-4, 171561-95-8, 86525-43-1, 86525-48-6, 86525-51-1, 86525-52-2, 89863-48-9, 89863-49-0, 89863-50-3, 89863-55-8, 89863-56-9, 89863-63-8, 89863-64-9, 93416-31-0, 680187-86-4, 56372-23-7, 68259-38-1, 1648539-69-8, 306974-45-8, 306979-40-8, 111393-39-6, 55591-23-6, 423-50-7, 1270179-82-2, 1270179-93-5, 129813-71-4, 1427176-17-7, 1427176-20-2, 148684-79-1, 160901-25-7, 160901-26-8, 1645842-67-6, 178094-71-8, 178535-22-3, 179005-06-2, 179005-07-3, 192662-29-6, 222716-67-8, 30295-56-8, 306973-47-7, 306974-19-6, 306980-27-8, 34455-03-3, 41997-13-1, 67584-48-9, 67939-92-8, 67969-65-7, 68239-74-7, 68259-15-4, 68298-09-9, 68555-75-9, 68608-13-9, 68608-14-0, 68957-61-9, 73772-33-5, 73772-34-6, 85665-64-1, 91081-99-1, 306975-84-8, 306978-65-4, 50598-28-2, 944578-05-6, 68957-32-4, 141607-32-1, 68891-98-5, 38850-60-1, 85520-91-8, 87988-56-5, 1893-52-3, 127133-66-8, 160336-17-4, 1645852-10-3, 67584-57-0, 67584-61-6, 67906-70-1, 67906-71-2, 67939-61-1, 68227-98-5, 68298-74-8, 70900-36-6, 1648534-82-0, 1648540-20-8, 306974-28-7, 306975-62-2, 306975-85-9, 306976-25-0, 306976-55-6, 306977-10-6, 306977-58-2, 306978-04-1, 504396-13-8, 507225-08-3, 70776-36-2, 70900-40-2, 71487-20-2, 68867-60-7, 68867-62-9, 68877-32-7, 68227-87-2, 68227-94-1, 68227-96-3, 68228-00-2, 68298-78-2, 68299-39-8, 68329-56-6, 68555-91-9, 68555-92-0, 68568-77-4, 68586-13-0, 68586-14-1, 68797-76-2, 68909-15-9, 68649-26-3
*	PFIB: 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene	382-21-8
	Phosgene	75-44-5
	Phosphine	7803-51-2
	Phosphorus oxybromide	7789-59-5
	Phosphorus oxychloride	10025-87-3
	Phosphorus pentabromide	7789-69-7
	Phosphorus pentachloride	10026-13-8

	Phosphorus pentafluoride	7647-19-0
	Phosphorus trichloride	7719-12-2
*	Quinuclidin-3-ol	1619-34-7
*	Ricin	9009-86-3
*	Saxitoxin	35523-89-8
	Sulphur tetrafluoride	7783-60-0
	Tetraethyl lead, tetramethyl lead and similar lead containing compounds	78-00-2; 75-74-1; 1920-90-7
*	Thiodiglycol: Bis(2-hydroxyethyl)sulfide	111-48-8
*	Thionyl chloride	7719-09-7
*	Triethanolamine	102-71-6
	Tungsten hexafluoride	7783-82-6
**	UV-328	25973-55-1

*Added as of 28 Feb 2023
**Added as of 12 Sep 2024
**Added as of 01 Jul 2025

Note :

- **For the above listed hazardous substances in Annex I, companies shall apply to include these hazardous substances individually into the HS Licence/Permit even though they are used as laboratory reagents.**
- **For the above items referring to chemical groups, the CAS Numbers listed are not exhaustive. If in doubt, you may wish to send your enquiry to NEA_PCD_HS@nea.gov.sg.**