

Planning (Hazardous Substances) Act 1990 - section 7(1)					
Planning (Hazardous Substances) Regulations 2015 - Regulation 5					
General Application for hazardous substances consent - Section 3 :					
TABLE A: substances covered by application					
NAME	CAS Number, IUPAC name where different	Schedule 1 Reference	Consent	Quantity for which consent is granted, Tonnes	Maximum quantity proposed to be present, Tonnes
Hydrogen	1333-74-0	named 15	Yes	1.42	1.42
LPG (propane)	74-98-6	named 18	Yes	0.12	0.12
50% formaldehyde solution	50-00-0	H2	Yes	50	50
33% aqueous ammonia	1336-21-6	E1	Yes	30	30
Diaminoethane (EDA)	107-15-3, ethylenediamine	P5b	Yes	44	44
Acetic acid	64-19-7	P5b	Yes	52	52
Acetic anhydride	108-24-7	P5c	Yes	78	78
Phosphorus trichloride (PCl ₃)	7719-12-2	H2	Yes	180	180
Benzene	71-43-2	P5c	Yes	763	763
Acetone	67-64-1, 2-propanone	P5c	Yes	36	36
Diphenyl ether/biphenyl (Therminol VP1)***	101-84-8/92-52-4 blend	E1	Yes	165	165
Crude polyphenyls (biphenyl/triphenyl/quaterphenyl, 45/35/20 %)	101-84-8/26140-60-3/29036-02-0	E1	Yes	107	107
Biphenyl	92-52-4	E1	Yes	1172	1172
Triphenyl (terphenyl 84%, quarterphenyl 16%) Terphenyl is typically 10/60/30% ortho, meta and para terphenyl.	26140-60-3/29036-02-0	E1	Yes	385	385
Diphenyl ether	101-84-8	E2	Yes	60	60
Therminol 66	61788-32-7	E2	No	1590	1680
Therminol 66J	61788-32-7 /	E2	No	0	112
Therminol 68	26140-60-3 / 68956-74-1	E1	No	0	20
BHMT, Bis-hexamethylenetriamine	143-23-7	H2	Yes	50	50
Nalco EC3018A	CLP mixture 85408-52-2/64742-94-5/202-049-5 @60/30/5%	E2	Yes	3.75	3.75
Diethylenetriamine	111-40-0	H2	Yes	57	57
Skydrol 5	Hydraulic oil 60-100% Triisobutyl phosphate 126-71-6/1-10% phenol isobutylenated phosphate 68937-40-6	E2	Yes	8	8
Therminol 72	Diphenyl ether 45%/terphenyl 38%/biphenyl 16%, 101-84-8/26140-60-3/92-52-4	E1	No	135	180
Therminol 75	m-terphenyl and o-terphenyl 26140-60-3	E1	No	0	70
Therminol VP3	Cyclohexylbenzene 827-52-1/ 92-51-3	E1	No	0	180
*** 73.5% Diphenyl ether and 26.5% biphenyl					

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LPG (propane)	74-98-6	named 18	Yes	0.12	0.12
50% formaldehyde solution	50-00-0	H2	Yes	50	50
33% aqueous ammonia	1336-21-6	E1	Yes	33	33
Several different materials classification P5b Flammable Liquids		P5b	Yes	100	100
Phosphorus trichloride (PCl ₃)	7719-12-2	H2	Yes	180	180
Several different materials classification P5c Flammable liquids		P5c	Yes	900	900
Several different materials, E2 Hazardous to the Aquatic Environment in Category Chronic 2		E2	Yes	2000	2000
Several different materials, E1 Hazardous to the Aquatic Environment in Category Chronic 1		E1	Yes	2000	2350
Diethylenetriamine	111-40-0	H2	Yes	57	57
BHMT, Bis-hexamethylenetriamine	143-23-7	H2	Yes	50	50

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General Application for hazardous substances consent - Section 4 :
Manner in which substances are to be kept and used

TABLE B**Part (a)**

NAME	Storage only	Stored and involved in industrial process
LPG (propane)	✓	
Hydrogen		✓
Kerosene		✓
50% formaldehyde solution		✓
33% aqueous ammonia		✓
Diaminoethane (EDA)		✓
Phosphorus trichloride (PCl ₃)		✓
Benzene		✓
Diphenyl ether/biphenyl (Therminol VP1)***		✓
Crude polyphenyls		✓
Biphenyl		✓
Triphenyl (Therminol intermediate)		✓
Diphenyl ether		✓
BHMT		✓
DETA		✓
Nalco		
Therminol 66		✓
Skydrol 5	✓	
Therminol 72		✓
Therminol 68		✓
Therminol 75		✓
Therminol 66J		✓
Therminol VP3/ VP3SA95		✓

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TABLE C.										
# Quick vessel/drawing number	Vessel number	Entry number	Name of substance stored in vessel	Installed above ground	Buried (y/n)	Mounded (y/n)	Max capacity / m ³	Highest vessel design temperature °C	Highest vessel design pressure (bar absolute)	Storage temperature °C**
012-15	50VE0002	named 15	Hydrogen storage	y	n	n	39.9	Ambient	138	Ambient
012-16	50TL0002	named 15	Hydrogen trailer (3 max)	y	n	n	39.2	Ambient	229	Ambient
012-18	50VE0002	named 15	Hydrogen storage	y	n	n	27.2	Ambient	229	Ambient
012-17, 013-2	05/1801	named 18	LPG (propane)	y	n	n	4.6	Ambient	16.2	Ambient
58053005-00017	29T0130	H2	Diethylenetriamine	y	n	n	57	Ambient	1	Ambient
005-23 (SC)	29T0110	H2	50% formalin	y	n	n	42	60	1	30
005-21 (SC)	29T0107	E1	33% aqueous ammonia	y	n	n	32	Ambient	18.5***	Ambient
005-10 (SC)	29T0125	P5b	Diaminoethane (EDA)	y	n	n	49	35	6***	35
016-1 (SC)	29T0151	H2	Phosphorus trichloride	y	n	n	55	Ambient	3***	Ambient
016-2 (SC)	29T0152	H2	Phosphorus trichloride	y	n	n	55	Ambient	3***	Ambient
Ref No. 1	18TA0011	P5c	Benzene	y	n	n	436	35	1.013	Ambient
58053002-00014	08TA0118	E2	Nalco	y	n	n	3.74	23.9	1	Ambient
002-1 (SC)	09T0204	E2	T72 Blender	y	n	n	43	40	1.025 @15 deg C	40
002-2 (SC)	09T0207	E1	Therminol VP1	y	n	n	56	40	1.025 @15 deg C	40
002-4 (SC)	07T3401	E1	Therminol VP3/ VP3SA95	y	n	n	22	287	2	200
002-5	07T3402	E1	Therminol VP3/ VP3SA95	y	n	n	22	287	2	200
Ref No. 5	18T0401	E1	Crude polyphenyls	y	n	n	40	287	2	200
Ref No. 5	18T0402	E1	Crude polyphenyls	y	n	n	40	287	2	200
001-8 (SC)	08TA0208	E1	Refined biphenyl	y	n	n	6	90	2	85
002-12 (SC)*	08TA0112	E1	Refined biphenyl	y	n	n	478	90	1	80-90
Ref No.10	18TA0112	E1	Refined biphenyl	y	n	n	478	250	1	120
001-6 (SC)	07T0205	E1	Refined biphenyl	y	n	n	18	160	1	160
002-3 (SC)	09T0153	E2	Diphenyl ether	y	n	n	56	40	1.025 @15 deg C	40
NP-GEN-0000-L-DRG-00013	08TA7201	E1	Triphenyl	y	n	n	44.9	260	1.05	180
NP-GEN-0000-L-DRG-00013	08TA7202	E1	Triphenyl (O&M only)	y	n	n	44.9	260	1.05	180
NP-GEN-0000-L-DRG-00013	08TA7203	E1	Triphenyl (P only)	y	n	n	56.4	425	4.5	400
Ref No. 11	17T0147	E1	Triphenyl	y	n	n	100	300	1.15	190

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Ref No. 11	17T0165	E1	Triphenyl	y	n	n	100	300	1.15	190
Ref No. 11	17T0301	E1	Triphenyl	y	n	n	100	300	1.15	190
58053-00016	09TA0110	E1	Therminol 72	y	n	n	113	Ambient	1	Ambient
58053-00016	09TA0300	E1	Therminol VP1	y	n	n	98.8	Ambient	1	Ambient
58053002-DRG-00014	07TA0166	E2	Therminol 66	y	n	n	22.7	-	1	Ambient
58053002-DRG-00014	07TA0126	E2	Therminol 66	y	n	n	24.4	-	1	Ambient
58053002-DRG-00014	07TA0167	E2	Therminol 66	y	n	n	24.4	Ambient	2	Ambient
58053002-DRG-00014	07TA0125	E2	Therminol 66	y	n	n	22.7	-	1	Ambient
58053008-DRG-00020	07T0157	E2	Therminol 66	y	n	n	341	-	1	Ambient
58053001-DRG-00013	07T0168	E2	Therminol 66	y	n	n	92	135	0.03	Ambient
58053001-DRG-00013	07T0162	E2	Therminol 66	y	n	n	92	135	0.03	Ambient
58053001-DRG-00013	07T0160	E2	Therminol 66	y	n	n	92	135	0.03	Ambient
58053013-00025		E2	Skydrol 5				3.8 litre tins			The following tan
58053013-00025	-	E1	Biphenyl flake		20kg bags		140T	Ambient	Ambient	002-12 (SC)*
58053013-00025	-	E1	Therminol 72		220kg drums		20T	Ambient	Ambient	
58053013-00025	-	E2	Therminol 66		208kg drums		830T	Ambient	Ambient	
58053013-00025	-	E1	Therminol VP1		220kg drums		55T	Ambient	Ambient	
58053013-00025	-	E1	Therminol VP3/ VP3SA95		220kg drums		30T	Ambient	Ambient	
58053013-00025	-	E1	Therminol 68		208kg drums		20T	Ambient	Ambient	
Drum storage drawing 59818-001	N/A	H2	BHMT, Bis-hexamethylenetriamine		MOVEABLE CONTAINERS		1T/IBC	Ambient	Ambient	Ambient
# - vessel numbers refer to Drawing number (58053-001 through 16) and "quick reference" vessel number										
* - inventory controlled to 500m ³										
** - controlled temperature in the storage, ambient means that the tank is not heated										
***- substances stored at atmospheric pressure										

TABLE D	Part 4(d)							
TH3 Drawing Reference	Entry number in Schedule 1 to the regulations	Substance	Description of process	Major items of plant which may contain the substance	Drawing reference	Max quantity likely to be present in the major plant item (tonne)	Max temp (deg C)	Max pressure (bar absolute)
	Dequest Amino		Dequest Amino process: The production of a range of organic phosphonate sequestering agents. They are typically amino phosphonates produced by the batch reaction between phosphorous trichloride, formaldehyde and an amine (grade dependent).					
	H2	Phosphorus trichloride		Amino reactor	29VE0205	None	115	1
	H2	50% formaldehyde solution		Amino reactor	29VE0205	3.4	130	1
	H2	50% formaldehyde solution		Amino stripper	29VE0206	5	130	1
	H2	BHMT, Bis-hexamethylenetriamine	Used in the Dequest Amino process for certain grades	Amino reactor	29VE0205	2.5T	130	1
	Dequest 2010		Dequest 2010 is a 60% aqueous solution of 1-hydroxyethylidene-1, 1-disphosphonic acid used as a sequestering agent. It is produced in a batch process reacting phosphorous trichloride, acetic acid and acetic anhydride.					
	H2	Phosphorus trichloride		2010 reactor	35VE1301	None	115	1
	Therminol		Therminol process: Production of industrial heat transfer fluids by the pyrolysis of benzene followed by refining and hydrogenation of the terphenyl or biphenyl. Biphenyl is also a finished product.					
	P5c	Benzene		Reflux stripping column (1)	08CO0202	3	350	1.15
	P5c	Benzene		Reflux stripping drum (1)	08TA0206	3	ambient	1.15
Ref No 3	P5c	Benzene		Benzene stripping column (2)	18CO0202	4.3	360	1.15
Ref No 3	P5c	Benzene		Benzene stripping column Reflux Drum (2)	18TA0206	16	ambient	1.15
	E1	Refined Biphenyl		Biphenyl Column	18CO0101	4	400	1.15
Ref No. 6	E1	Refined Biphenyl		Biphenyl Column Reflux Drum	18TA0108	2.7	150	1.15
	E1	T72		T72 Column	08CO0101	3	410	1.15
	E1	T72		T72 reflux drum	08TA0108	2	150	1.15
Ref No. 6	E1	Triphenyl (polyphenyls mixture)		Santowax Column Bottoms	17CO0108	6	410	1.15
Ref No. 6	E1	Triphenyl (polyphenyls mixture)		Santowax Column Receiver	17TA0142	2.2	410	1.15
58053019-DRG-00372	E2	Therminol 66		North Autoclave	17VE0122	4.7	250	31
58053019-DRG-00372	E2	Therminol 66		South Autoclave	17VE0121	4.7	250	31
58053019-DRG-00372	E2	Therminol 66		Filtrate reciever vessel	17TA0124	10.9	250	26
58053019-DRG-00372	E2	Therminol 66		Filtrate reciever vessel	17TA0123	10.9	250	26
58053019-DRG-00371	E2	Therminol 66		TH3 Cooling Tank	17TA0701	35.2	180	1.15
58053001-DRG-00013	E1	VP3		VP3 Cooling Tank	07TA3131	2	180	1.15
58053001-DRG-00013	E1	VP3/ VP3SA95		VP3 Autoclave	07VE3121	3.0	250	82.7
58053001-DRG-00013	E1	VP3/ VP3SA95		VP3 Filtrate Reciever	07TA3123	6.7	180	26
	** Includes recycled acetic. All acetic in the reactor are acetic acid, acetic anhydride and acetyl chloride							

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Part 5		
(a) The letters of consent are enclosed		
(b) List the maps or plans or any explanatory scale drawings of plant/buildings submitted with this application. See Tab Section 5 b		
(c) Provide details of how each relevant substance is proposed to be transported to and from the land to which the application relates. See below		
Substance	Transported to site	Transported from site
LPG (propane)	Road tanker	N/A
Hydrogen	Road tanker	Road Tanker
50% formaldehyde solution	Road tanker	N/A
33% aqueous ammonia	Road tanker	N/A
Diaminoethane (EDA)	Road tanker	N/A
Phosphorus trichloride (PCl ₃)	Road tanker	N/A
Benzene	Road tanker	N/A
Diphenyl ether/biphenyl (Therminol VP1)***	N/A	Road tanker, or drums
Crude polyphenyls	N/A	N/A
Biphenyl	N/A	Road tanker or solid flake in 20kg bags
Triphenyl (Therminol intermediate)	N/A	
Diphenyl ether	Road tanker	Road, drums
BHMT	Road, 1T IBCs	N/A
DETA	Road tankers	N/A
Nalco	Road, 200kg drums	N/A
Therminol 66	N/A	Road tanker, 208kg drums
Skydrol 5	Road	3.8litre tins
Therminol 72	N/A	Road tanker, drums
Therminol 68	N/A	Road tanker, 208kg Drums
Therminol 75	N/A	Road tanker, drums
Therminol 66J	N/A	Road tanker, drums
Therminol VP3/ VP3SA95	N/A	Road tanker, drums

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	Part 5(b)		
	Drawings supplied previously with no changes		
	58053-002	Biphenyl storage area	
	58053-002	CONFIDENTIAL version of biphenyl storage area	
	58053-012	Boiler House area	
	58053-008	South Tank Farm storage	
	57764-123	Santicizer plant 1st floor	
	58539-010	Polyphenyls (Therminols) plant layout	
	58053-001	HB40 storage area	
	58053-005	Dequest/santoflex storage area	
	58053-006	Santicizer storage area	
	58053-009	Maleic storage area	
	58053-013	Stores and Distribution area	
	58053-016	PCI3 and POCI3 storage area	
	58053-015	Grid reference for storage area drawings	
	TH3	Site Location Plan RevA	
	TH3	TH3 project main plant area	
	TH3	TH3 project proposed benzene storage area	
	58053-008	South Tank Farm storage	
	DRG-00373	Site layout showing warehouse location	
	58053013-00025	Stores and distribution	
	58053005-00017	Dequest storage area	
	58053018-DRG-00371	TH3 storage 1 of 2	
	58053019-DRG-00372	TH3 storage 2 of 2	
	Drawing supplied with this application		
	58053001-DRG-00013	HB40 storage area	
	58053002-DRG-00014	Biphenyl storage area	
	58053008-DRG-00020	South Tank Farm Storage	
	58053004-00016	Dequest drumming and Therminol loading	