

REFERENCE LIST

Process Gas Cooler / Waste Heat Boiler / Steam Superheater / Economiser in Process Gas Stream

Product	Year of comm.	Customer	Location	Plant Capacity (MTPD)	Gas Flow [Nm ³ /h]	Gas Flow [kg/h]	Gas Inlet Temperature [°C]	Main material	Pressure [bar(g)]	Steam/Shell Pressure [bar(g)]	Steam/Shell Temperature [°C]
Ethylene oxide	2021	BASF EO2 plant (W7101)	Antwerpen / Belgium				250	1.4541	23	23	300
Ethylene oxide	2021	BASF EO2 plant (W7102)	Antwerpen / Belgium				250	1.4541	23	23	320
Ammonia	2016	BASF Ammonia plant 4 (W721)	Ludwigshafen / Germany				538	2 1/4CR-1Mo	210	210	470
Ammonia	2013	BASF Ammonia plant 4 (W722)	Ludwigshafen / Germany				510	2 1/4CR-1Mo	209	115	325
Ammonia	2005	UHDE / Mopco	Egypt				1012	1 1/4Cr-1Mo	33,9	328	125
Ammonia	2001	Krupp-Uhde / ZIA-FERTILIZER	Ashuganj / Bangladesh	1,000	215,250		990	1 1/4Cr-1Mo	31.5	124	327
Methanol	2001	Methanex	Motunui / New Zealand	2,500	2 x 226,360		871		21.5	121.5	326
Ammonia	2000	Krupp-Uhde	Suez / Egypt	1,200	223,330		1,014	1 1/4Cr-1Mo	36.5	137	335
Ammonia	2000	Krupp-Uhde	Suez / Egypt	1,200	223,330		536	1 1/4Cr-1Mo	36.5	137	335
Ammonia	1999	BASF	Antwerpen / Belgium	1,800		374.990	465	2 1/4CR-1Mo	182.5	126	329
Ammonia	1999	IGSAS	Izmit / Turkey	1,000			400	2 1/4CR-1Mo	120	128	330
Ammonia	1999	TECNIMONT/ B&R / Safco	Al Jubail / Saudi Arabia	1,500	328,520		860	1 1/4Cr-1Mo	29.5	129	330
Ammonia	1998	Krupp-Uhde	Abu Quir / Egypt	1,200	223,330		1,014	1 1/4Cr-1Mo	36.5	137	335
Ammonia	1998	Krupp-Uhde	Abu Quir / Egypt	1,200	223,330		536	1 1/4Cr-1Mo	36.5	137	335
Ammonia	1998	GPIC	Bahrain	1,000			400	2 1/4CR-1Mo	120	127	326
CnHm	1998	Mossgas	Mosselbay / RSA		204,000		960		25	124	327
Ammonia	1997	Sasferco	Belle Plaine / Canada	1,800	344,700		999	1 1/4Cr-1Mo	38	124	327

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Ammonia	1996	Jian Feng Chemical Industries	China			159,590	869	1 1/4Cr-1Mo		130	331
Ammonia	1996	Saskferco	Belle Plaine / Canada	1,800	344,700		480	2 1/4CR-1Mo	210	138	340
Syngas	1996	Shell UK	Stanlow / UK		25,400		900		15.8	22.5	220
Ammonia	1995	BASF	Ludwigshafen / Germany				400	2 1/4CR-1Mo	209	115	325
Ammonia	1995	Hydro Agri	Belgium	1,600		278,130	872	1 1/4Cr-1Mo	29.7	103,4	314
Methanol	1995	METANOR	Camacari / Brazil	220	50,000		839		18	65	
Ammonia	1995	TERRA-INTERN. / Uhde	Courtright / Canada	1,300	272,400		953	1 1/4Cr-1Mo	36	124	327
Ammonia	1994	BASF	Antwerpen / Belgium	1,800			465	2 1/4CR-1Mo	200	138	340
Methanol	1994	FORTIER-METHANOL / LURGI	Westwego / USA	1,720	248,370		960		27.1	44.8	257
Ammonia	1994	IGSAS	Izmit / Turkey	1,000		162,333	1,005	1 1/4Cr-1Mo	30.1	128	328
Ammonia	1994	ÖMV/Agro Linz	Linz / Austria	850	187,650		985	1 1/4Cr-1Mo	31	124	327
FCC	1993	Lurgi / Veba Öl	Gelsenkirchen / Germany			118,944	738			45	450
Ammonia	1990	BASF	Ludwigshafen / Germany	1,000	230,000		961	1 1/4Cr-1Mo	31	122	
Off Gas	1990	Kronos Titan	Leverkusen / Germany			18,000	1,000			21	420
Ammonia	1990	Uhde / BASF	Antwerp / Belgium	1,800			465	2 1/4CR-1Mo	200	138	340
Ammonia	1990	Uhde / BASF	Antwerp / Belgium	1,800			433	2 1/4CR-1Mo	200	138	340
Cn Hm	1989	Lurgi / MOSSREF	Mossel-Bay / RSA		3 x 204,000		960		25	124	

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Cn Hm	1989	Lurgi / MOSSREF	Mossel-Bay / RSA		3 x 204,000		520		25	124	
Ammonia	1988	Uhde / Duslo N.P. Sala	CSFR				480	2 1/4CR-1Mo	314	132	360
Ammonia	1987	C.F. Braun / NSM	Sluiskil / Netherlands	1,600			510	2 1/4CR-1Mo	190	120	325
Ammonia	1987	C.F. Braun / NSM	Sluiskil / Netherlands	1,600			497	2 1/4CR-1Mo	190	120	325
Ammonia	1987	C.F. Braun / NSM	Sluiskil / Netherlands	1,600			540	2 1/4CR-1Mo	190	190	475
Ammonia	1987	C.F. Braun / NSM	Sluiskil / Netherlands	1,600			400	2 1/4CR-1Mo	120	190	433
Hydrogen	1987	HALDOR-TOPSOE / Air-Products	Rozenburg / Netherlands		10,550		947		23	69	
Hydrogen	1987	HALDOR-TOPSOE / Air-Products	Rozenburg / Netherlands		10,550		440		23	69	
Ammonia	1987	Uhde / NAPETCO	Marsa el Brega / Lybia	1,000	220.000		961	1 1/4Cr-1Mo	32	127	
Ammonia	1986	Uhde / CIL INC.	Courtright / Canada	1,000		215,000	950	1 1/4Cr-1Mo	32	124	
Ammonia	1986	Uhde / CIL INC.	Courtright / Canada	1,000		215,000	720	1 1/4Cr-1Mo	32	124	
Ammonia	1986	Uhde / CIL INC.	Courtright / Canada	1,000		215,000	564	1 1/4Cr-1Mo	32	124	
Ammonia	1985	NSM	Sluiskil / Netherlands	1,600			510	2 1/4CR-1Mo	171	103.4	325
Ammonia	1985	NSM	Sluiskil / Netherlands	1,600			540	2 1/4CR-1Mo	215	215	470
Methanol	1984	Uhde / NAPETCO	Marsa el Brega / Lybia	1,000	230,000		880		18	77	
Methanol	1984	Uhde / NAPETCO	Marsa el Brega / Lybia	1,000	230,000		570		18	77	
Methanol	1982	METANOR	Camacari / Brazil	220	50,000		839		18	65	

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Ammonia	1982	Uhde / PIAP	Arroyito / Argentina				430	2 1/4CR-1Mo	249	32	240
Ammonia	1982	Uhde / ENFERSA	Spain	600	140,000		1,000	1 1/4Cr-1Mo	28	83	
Ammonia	1979	Uhde	Abu Quir / Egypt				400	2 1/4CR-1Mo	333	44	260
Ammonia	1979	Salzgitter Industriebau	Romania				425	2 1/4CR-1Mo	380	150	350
Ammonia	1978	SNAMPROGETTI / N.F.C.	Mirpur Mathelo / Pakistan	1,000	245,000		972	1 1/4Cr-1Mo	31	114	
Ammonia	1978	SNAMPROGETTI / N.F.C.	Mirpur Mathelo / Pakistan	1,000	245,000		490	1 1/4Cr-1Mo	31	114	
Ammonia	1978	SNAMPROGETTI / N.F.C.	Mirpur Mathelo / Pakistan	1,000	245,000		434	1 1/4Cr-1Mo	31	114	
Methanol	1977	Uhde / Nat. METH.CORP.	Marsa el Brega / Lybia	1,000	230,000		880		17	77	
Methanol	1977	Uhde / Nat. METH.CORP.	Marsa el Brega / Lybia	1,000	230,000		570		17	77	
Ammonia	1976	Uhde / IGSAS	Izmit / Turkey	1,000	230,000		961	1 1/4Cr-1Mo	29	129	
Ammonia	1976	Uhde / IGSAS	Izmit / Turkey	1,000	230,000		600	1 1/4Cr-1Mo	29		
Ammonia	1976	Uhde / NAT. OIL. CORP.	Marsa el Brega / Lybia	1,000	220,000		980	1 1/4Cr-1Mo	32	127	
Ammonia	1976	Uhde / NAT. OIL. CORP.	Marsa el Brega / Lybia	1,000	220,000		480	1 1/4Cr-1Mo	32		
Ammonia	1975	Uhde	Burma	100			250	2 1/4CR-1Mo	450	5	220
Ammonia	1974	NSM	Sluiskil / Netherlands	600			510	2 1/4CR-1Mo	255	116.5	330
Ammonia	1974	Uhde	Repesa / Spain	600			350	2 1/4CR-1Mo	450	45	250
Ammonia	1972	Ruhrchemie (Hoechst)	Oberhausen / Germany	3 x 70			300	2 1/4CR-1Mo	850	5	200

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Ammonia	1972	Ruhrchemie (Hoechst)	Oberhausen / Germany	3 x 70			200	2 1/4CR-1Mo	850	5	50
Ammonia	1972	Uhde	Lisboa / Portugal	500			350	2 1/4CR-1Mo	450	38	350
Ammonia	1970	BASF	Ludwigshafen / Germany	1,000	230,000		991	1 1/4Cr-1Mo	31	122	
Ammonia	1970	BASF	Ludwigshafen / Germany	1,000	230,000		600	1 1/4Cr-1Mo	31	122	
Ammonia	1970	BASF	Ludwigshafen / Germany	1,000	230,000		420	1 1/4Cr-1Mo	31		
Ammonia	1970	BASF	Suez / Egypt	2 x 100			250	2 1/4CR-1Mo	450	10	200
Ammonia	1970	Uhde / ENCASO	Puertollano / Spain	600	125,000		970	1 1/4Cr-1Mo	28	91	
Ammonia	1970	Uhde / ENCASO	Puertollano / Spain	600	125,000		500	1 1/4Cr-1Mo	28		
Hydrogen	1970	Uhde / ENCASO	Puertollano / Spain				823		18	30	
Ammonia	1970	Uhde / Gew. Victor	Castrop Rauxel / Germany	800	190,000		980	1 1/4Cr-1Mo	32	137	
Ammonia	1970	Uhde / Gew. Victor	Castrop Rauxel / Germany	800	190,000		620	1 1/4Cr-1Mo	32	137	
Ammonia	1970	Uhde / Gew. Victor	Castrop Rauxel / Germany	800	190,000		445	1 1/4Cr-1Mo	32		
Methanol	1969	BASF	Ludwigshafen / Germany	700	135,000		858		20	122	
Methanol	1969	BASF	Ludwigshafen / Germany	700	135,000		580		20	122	
Methanol	1969	BASF	Ludwigshafen / Germany	700	135,000		340		20		
Ammonia	1969	BASF	Ludwigshafen / Germany	500			350	2 1/4CR-1Mo	450	10	200
Ammonia	1969	Uhde	Turnu Magulete / Romania	300			250	2 1/4CR-1Mo	450	3	250

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Ammonia	1969	Uhde	Turnu Magulete / Romania	300			200	2 1/4CR-1Mo	450	6	50
Ammonia	1965	Uhde	Cuzco / Peru	50			300	2 1/4CR-1Mo	450	4.5	300
Ammonia	1965	Uhde	Frankfurt / Germany	300			250	2 1/4CR-1Mo	472	5.6	250
Ammonia	1965	Uhde	Arklow / Ireland	120			250	2 1/4CR-1Mo	450	6	250
Ammonia	1965	Uhde	Mae Moh / Thailand	120			200	2 1/4CR-1Mo	450	5	50
Ammonia	1965	Uhde / Hoechst	Rourkela / India	4 x 116			250	2 1/4CR-1Mo	450	2.2	250
Ammonia	1964	Uhde	Aviles / Spain	160			500	2 1/4CR-1Mo	450	28	250
Ammonia	1964	Uhde	Turnu Magulete / Romania	300			250	2 1/4CR-1Mo	450	3	250
Ammonia	1963	Uhde	Lisboa / Portugal	170			250	2 1/4CR-1Mo	450	3	250