

Equipment list production building #218

status: 2016, May

Ullman type metal-organic catalyst reactions in solvent based, non-acidic reactions
Pd-catalyzed N-C-Coupling Reaction, Buchwald-Hartwig-Reaction
Modification of selected plant components for the synthesis of higher melting amines

2004 - 2008
2009 - 2014
2011

Internal No.	Equipment No.	Description	Technical parameter	Material	Comments	Function
218-0081	C2001	reaction vessel, 1678 litres, outer half-tube coil	-1 to +6 bar -10 to 300°C	stainless steel 1.4571	ANA-Verfahrenstechnik GmbH, Agitator: Propeller (2), STELZER	synthesis reactor
218-0080	R2002	distillation vessel, 2536 litres outer half-tube coil	-1 to +6 bar -25 to 300°C	stainless steel 1.4571	ANA-Verfahrenstechnik GmbH, Agitator: Anchor, STELZER	precipitation photoconductor & distillation crude amin
218-0084	R2001A	feed vessel, 1443 litres, double jacket	-1 to +6 bar 5 to 220°C	stainless steel 1.4571	ANA-Verfahrenstechnik GmbH, Agitator: Propeller, STELZER	storage vessel for amine distillate
218-0083	R2001B	feed vessel, 1443 litres, double jacket	-1 to +6 bar 5 to 220°C	stainless steel 1.4571	ANA-Verfahrenstechnik GmbH, Agitator: Propeller, STELZER	storage vessel for amine distillate
218-0082	R2001C	feed vessel, 1443 litres, double jacket	-1 to +6 bar 5 to 220°C	stainless steel 1.4571	ANA-Verfahrenstechnik GmbH, Agitator: Propeller, STELZER	storage vessel for feed mixture
218-0111	B2005	distillate receiver, 500 litres	-1 to +6 bar 1 to 200°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	distillation receiver amine
218-0112	B2006	distillate receiver, 500 litres	-1 to +6 bar 1 to 200°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	distillation receiver amine
218-0222	B2007	distillate receiver, 133 litres, graduated	-1 to +0,6 bar to 160°C	Borosilicate glass 3.3	QVF	visual inspection of intermediate fraction
218-0116	B2302	blow down vessel, 1000 litres	0 to +6 bar 1 to 250°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	safety fuction
218-0108	B2008	feed vessel, 500 litres	-1 to +6 bar 1 to 100°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	storage vessel xylene
218-0106	B2009	feed vessel, 1000 litres	-1 to +6 bar 1 to 100°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	storage vessel organic solvent
218-0107	B2010	feed vessel, 1000 litres	-1 to +6 bar 1 to 100°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	storage vessel methanol
218-0086	F2001	pressure filter, 1300 litres, double jacket	-1 to +6 bar -10 to 180°C	stainless steel 1.4571	DVA Deutsche Vakuumapparate www.dva-gmbh.de	out of operation
218-0085	F2004	pressure filter /filter dryer, 2015 litres, double jacket	-1 to +6 bar -10 to 180°C	stainless steel 1.4571	DVA Deutsche Vakuumapparate	filtration and drying photoconductor
without	F2003	Dust filter 68 litres	-1 to +6 bar 1 to 100°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	dust filter for F2004
218-0087	R2003	waste receiver 3.749 litres, double jacket	-1 to +6 bar -25 to 200°C	stainless steel 1.4571	ANA-Verfahrenstechnik GmbH, Agitator: Pitched blade & Propeller, STELZER	collecting vessel for waste solvents
218-0117	B2001	distillate receiver, 100 litres, 6087-001	-1 to +6 bar 1 to 80°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	collecting vessel for distillate C2001
218-0113	B 2004	distillate receiver, 100 litres, 6088-001	-1 to +6 bar 1 to 100°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	collecting vessel for solvents F2004
218-0115	B 2002	pump receiver, 100 litres	-1 to +6 bar -25 to 200°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	pump receiver for F2001
218-0114	B 2011	pump receiver, 100 litres	-1 to +6 bar -25 to 200°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	pump receiver for F2004
218-0089	B 2012	condensate receiver, 50 litres	-1 to +6 bar -25 to 100°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	auxiliary vessel drain B2004
218-0110	B2301	solvent separation vessel 200 litres	0,1 bar -25 to 40°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	part of the solvent emissions system
218-0109	B2311	solvent separation vessel 200 litres	0,1 bar -25 to 40°C	stainless steel 1.4571	Pneumatik-Behälter und -Anlagen GmbH Wurzen	part of the solvent emissions system
218-0010	P 2001	Delivery pump, 5m³/h	impeller, wheel housing 1.4408		KSB Aktiengesellschaft	Monobloc pumps (Magnechom-Block, KSB), with magnetic drive ATEX: Ex II G T2-T4
218-0011	P 2002	Delivery pump, 5m³/h	impeller, wheel housing 1.4409		KSB Aktiengesellschaft	
218-0012	P 2003	Delivery pump, 5m³/h	impeller, wheel housing 1.4410		KSB Aktiengesellschaft	
218-0013	P 2004	Delivery pump, 5m³/h	impeller, wheel housing 1.4411		KSB Aktiengesellschaft	
218-0014	P 2005	Delivery pump, 5m³/h	impeller, wheel housing 1.4412		KSB Aktiengesellschaft	
218-0015	P 2006	Delivery pump, 5m³/h	impeller, wheel housing 1.4413		KSB Aktiengesellschaft	
218-0016	P 2007	Delivery pump, 5m³/h	impeller, wheel housing 1.4414		KSB Aktiengesellschaft	
218-0017	P 2008	Delivery pump, 5m³/h	impeller, wheel housing 1.4415		KSB Aktiengesellschaft	
218-0018	P 2010	Delivery pump, 5m³/h	impeller, wheel housing 1.4416		KSB Aktiengesellschaft	
218-0019	P 2011	Delivery pump, 5m³/h	impeller, wheel housing 1.4417		KSB Aktiengesellschaft	
218-0325	P 2009	Air operated diaphragm pump	PTFE-layered membrane		Crane Process Flow Technologies GmbH	ATEX: Ex II 2 GD
218-0327	P 2012	Air operated diaphragm pump	PTFE-layered membrane		Crane Process Flow Technologies GmbH	
218-0326	P 2013	Air operated diaphragm pump	PTFE-layered membrane		Crane Process Flow Technologies GmbH	
without	P 2014	Air operated diaphragm pump	PTFE-layered membrane		Crane Process Flow Technologies GmbH	
without	P 2015	Air operated diaphragm pump	PTFE-layered membrane		Crane Process Flow Technologies GmbH	
218-0152	W2003	Heat transfer plant for R2001A/B/C und F2001	IT HW 350-Ex, electrical power 20 kW water, +5 ... +120°C		LAUDA www.lauda.de	ATEX: Ex II 2G T3
218-0151	W2004	Heat transfer plant for R2002 und R2003	IT H 600-Ex, electrical power 90 kW, Heat cycle: Therminol 59,		LAUDA	ATEX: Ex II 2G T2
218-0153	W2005	Heat transfer plant for C2001	IT H 400-Ex, electrical power 60 kW, Heat cycle: Therminol 59, Primary loop: water, +5 ... 120°C		LAUDA	ATEX: Ex II 2G T2
218-0154	W2008	Heat transfer plant for F2004	IT HW 350-Ex, electrical power 20 kW water, +5 ... 120°C		LAUDA	ATEX: Ex II 2G T3
218-0150	W2011	Heat transfer plant for W2006	IT HW 350-Ex, electrical power 20 kW water, +5 ... +120°C		LAUDA	ATEX: Ex II 2G T3
218-0210	W2012	Heat transfer plant for R2001C	WTE 05-2-18-1-2-Ex, electrical power, 18 kW Marlotherm SH		HTT, new 2011	ATEX: Ex II 2G T3
218-0305 218-0304	V2001 V2002	Vacuum pumps für R2002 und	TWISTER VSB 430 oil-free, dry screw-type pump, Capacity: 330 m³/h Ultimate vacuum: 0,3 mbar (abs.)		Rietschle Thomas GmbH & Co. KG www.rtpumps.com	ATEX: Ex de II C 14 EX II 2 G

	BE27	Recooling plant with cooling tower. Typ GHKV 3412	Typ GHKV 3412 Cooling capacity: 500 kW Amount cooling water: 45m³ Coolwater input: 31°C Coolwater output: 21°C Tank: 2x3000 Liter		gwk Gesellschaft Wärme Kältetechnik mbH, Kierspe	
without	PLS	Process control system, CENTUM CS 1000	Updated 2010		Yokogawa	
218-0270		Lift-truck, mechanical	lifting capacity: 100 kg	material 1.4301	MEILLER (2009)	ATEX Zone 2
218-0038		Absaugbox				
	X2002	Piab				