KA21	Activated carbon based	MEA	monoethanolamine	CESAR 1	0.28 g/g 2-Amino-2-methyl-1-propanol (AMP) +0.17 g/g Piperazine (PIP) + 0.55 g/g Water
APBS	novel solvent (without composition	DEA	diethanolamine	CESAR 2	0.32 g/g 1,2-Ethanediamine (EDA) + 0.68 g/g Water
		MDEA	methyldiethanolamine	NH_3	Ammonia
		AMP	2-amino-2methyl-1-propanol	K_2CO_3	Potassium carbonate

Solvent	% of CO2 in flue gas	concen-tration %	Absorption conditions Temperature [°C]	Pressure [kPa]	Desorption conditions Temperature [°C]	Pressure [kPa]	Uptake CO2 [mol/kg]	Minimum regeneration energy [GJ/t_{CO2}]	chemical stability (requirements of flue trace compounds) e.g. Sulfur compounds, NOx, water,… (After 1000 operation hours)
MEA	10,5		45	110,5	120	180		3,6	degradation by oxygen, SOx and NOx
MEA			40-50	111	100-140	111			amine degradation by SO2, NOX and oxygen
MEA		30	43-60	101	130	280			
MEA	3-14		40		120		2,5	4,1	
MEA	8,9	30	35-55	101	100-120	200		6,3	
DEA	8,9	30	35-55	101	100-120	200		6,3	
MDEA	8,9	50	35-55	101	100-120	200		7,4	
AMP	8,9	30	35-55	101	100-120	200		5,2	
NH_3	5		10	101	100	101		2,35	Does not degrade
NH_3	5 - 15	9	20	120				2,4	no degradation
NH_3		14,4	10	105				2,29	
NH_3		2 - 6	0 - 10	101	100-120	500			
K_2CO_3	12	15	20-40	101	60	101		2,65	
APBS	12,5		45	10,5	120	180		2,8	
CESAR1	3-14		40		120		3	3,3	
CESAR2	3-14		40		120		5	3,8	

toxicity LD50	flamability	cost (indicative)	Other features
		80 mg of Fe, Cr, Ni, Mn, etc/L with MEA within 600 operating hours	
Oral: 1720 mg			
Oral: 710mg			
Oral: 1945mg			
Oral: 2900mg			
Inhalation cca !	651°C	400 €/tonne	
			it is low-cost, less corrosive, and does not degrade in the presence of O2 an

18 BUMB, Prateek, Ramesh KUMAR, Purvil KHAKHARIA a Earl GOETHEER. Demonstration of Advar
19 WU, Xiaomei, Yunsong YU, Zhen QIN a Zaoxiao ZHANG. The Advances of Post-combustion CO2
20 MANGALAPALLY, Hari P. a Hans HASSE. Pilot plant study of two new solvents for post combusti
21 LEE, Anita S., John C. ESLICK, David C. MILLER a John R. KITCHIN. Comparisons of amine solvent
22 PADUREAN, Anamaria, Calin-Cristian CORMOS, Ana-Maria CORMOS a Paul-Serban AGACHI. Mu
PADUREAN, Anamaria, Calin-Cristian CORMOS, Ana-Maria CORMOS a Paul-Serban AGACHI. Mu
PADUREAN, Anamaria, Calin-Cristian CORMOS, Ana-Maria CORMOS a Paul-Serban AGACHI. Mu
PADUREAN, Anamaria, Calin-Cristian CORMOS, Ana-Maria CORMOS a Paul-Serban AGACHI. Mu
23 JILVERO, Henrik, Fredrik NORMANN, Klas ANDERSSON a Filip JOHNSSON. Ammonia-based post
24 MOLINA, Carol Toro a Chakib BOUALLOU. Assessment of different methods of CO2 capture in p
25 VERSTEEG, Peter a Edward S. RUBIN. A technical and economic assessment of ammonia-based
26 YU, Hai, Guojie QI, Shujuan WANG, Scott MORGAN, Andrew ALLPORT, Aaron COTTRELL, Thong
27 KOTHANDARAMAN, Anusha, Lars NORD, Olav BOLLAND, Howard J. HERZOG a Gregory J. MCRA
28 BUMB, Prateek, Ramesh KUMAR, Purvil KHAKHARIA a Earl GOETHEER. Demonstration of Advar
29 MANGALAPALLY, Hari P. a Hans HASSE. Pilot plant study of two new solvents for post combusti
MANGALAPALLY, Hari P. a Hans HASSE. Pilot plant study of two new solvents for post combusti

ıced APBS Solvent at TNO's CO2 Capture Pilot Plant. *Energy Procedia* . 2014: 1657-1666. ISSN 18766102. Dostupné také z: http://linkinghub.elsevier.com/retrieve/pii/S1876610214019900
Capture with Chemical Solvents: Review and Guidelines. *Energy Procedia* . 2014, **63**: 1339-1346. ISSN 18766102. Dostupné také z: http://linkinghub.elsevier.com/retrieve/pii/S1876610214019584
ion carbon dioxide capture by reactive absorption and comparison to monoethanolamine. Chemical Engineering Science [online]. 2011, 66(22): 5512-5522 [cit. 2015-12-11]. DOI: 10.1016/j.ces.2011.06.054. ISSN 00092509.
s for post-combustion CO2 capture: A multi-objective analysis approach. International Journal of Greenhouse Gas Control [online]. 2013, 18: 68-74 [cit. 2015-12-06]. DOI: 10.1016/j.ijggc.2013.06.020. ISSN 17505836. Dostu
ılticriterial analysis of post-combustion carbon dioxide capture using alkanolamines. International Journal of Greenhouse Gas Control [online]. 2011, 5(4): 676-685 [cit. 2015-12-06]. DOI: 10.1016/j.ijggc.2011.02.001. ISSN 17
ılticriterial analysis of post-combustion carbon dioxide capture using alkanolamines. International Journal of Greenhouse Gas Control [online]. 2011, 5(4): 676-685 [cit. 2015-12-06]. DOI: 10.1016/j.ijggc.2011.02.001. ISSN 17
ılticriterial analysis of post-combustion carbon dioxide capture using alkanolamines. International Journal of Greenhouse Gas Control [online]. 2011, 5(4): 676-685 [cit. 2015-12-06]. DOI: 10.1016/j.ijggc.2011.02.001. ISSN 17
ılticriterial analysis of post-combustion carbon dioxide capture using alkanolamines. International Journal of Greenhouse Gas Control [online]. 2011, 5(4): 676-685 [cit. 2015-12-06]. DOI: 10.1016/j.ijggc.2011.02.001. ISSN 17
combustion – The techno-economics of controlling ammonia emissions. *International Journal of Greenhouse Gas Control* [online]. 2015, 06/2015,**2015**(37): 441–450 [cit. 2015-12-02]. DOI: 10.1016/j.ijggc.2015.03.039. ISBN
post-combustion using ammonia as solvent. Journal of Cleaner Production [online]. 2015, 103: 463-468 [cit. 2015-12-13]. DOI: 10.1016/j.jclepro.2014.03.024. ISSN 09596526. Dostupné z: http://linkinghub.elsevier.com/retri
post-combustion CO2 capture at coal-fired power plants. International Journal of Greenhouse Gas Control [online]. 2011, 5(6): 1596-1605 [cit. 2015-12-13]. DOI: 10.1016/j.ijggc.2011.09.006. ISSN 17505836. Dostupné z: ht
DO, James MCGREGOR, Leigh WARDHAUGH, et al. Results from trialling aqueous ammonia-based post-combustion capture in a pilot plant at Munmorah Power Station: Gas purity and solid precipitation in the stripper. Inte
E. Comparison of solvents for post-combustion capture of CO2 by chemical absorption. *Energy Procedia* . 2009: 1373-1380. ISSN 18766102. Dostupné také z: http://linkinghub.elsevier.com/retrieve/pii/S187661020900181
ıced APBS Solvent at TNO's CO2 Capture Pilot Plant. *Energy Procedia* . 2014: 1657-1666. ISSN 18766102.
ion carbon dioxide capture by reactive absorption and comparison to monoethanolamine. Chemical Engineering Science [online]. 2011, 66(22): 5512-5522 [cit. 2015-12-06]. DOI: 10.1016/j.ces.2011.06.054. ISSN 00092509.
ion carbon dioxide capture by reactive absorption and comparison to monoethanolamine. Chemical Engineering Science [online]. 2011, 66(22): 5512-5522 [cit. 2015-12-06]. DOI: 10.1016/j.ces.2011.06.054. ISSN 00092509.

Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S0009250911004404
pné z: http://linkinghub.elsevier.com/retrieve/pii/S1750583613002703
'505836. Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S1750583611000119
'505836. Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S1750583611000119
'505836. Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S1750583611000119
'505836. Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S1750583611000119
I 10.1016/j.ijggc.2015.03.039. Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S1750583615001498
ieve/pii/S0959652614002455
tp://linkinghub.elsevier.com/retrieve/pii/S1750583611001769
ernational Journal of Greenhouse Gas Control [online]. 2012, 10: 15-25 [cit. 2015-12-13]. DOI: 10.1016/j.ijggc.2012.04.014. ISSN 17505836. Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S1750583612001028
'

Dostupné z: http://linkinghub.elsevier.com/retrieve/pii/S0009250911004404