

Range of Syngas Compositions Across Different Gasifier Type, and Feedstock Produced by the Gasification of Coal Feedstocks

Gasifier	General ¹	E-Gas ²	Shell ³	Shell ³	GE ³	KRW ⁴	Air Blown – Transport ⁵	Oxygen Blown – Transport ⁵	E-Gas ⁶	Wellman-Galusha (Air Blown) ⁷	E-Gas ⁸	GE ⁹ (Oxygen Blown)	GE ⁹ (Air Blown)	PREN-FLO ¹⁰	TRIG (Transport Gasifier) ¹¹	TRIG (Transport Gasifier) ¹¹	BGL ¹²
Facility	-	Wabash	-	-	-	Pinon Pine Power Project	-	-	Wabash	Pilot	Wabash	-	-	Puertolano	-	-	-
Coal	General	Several	General	General	General	Several	Several	Several	Several	Sulcis	Several	Unknown	Unknown	Coal/Petcoke	Wyoming PRB	North Dakota Lignite	Several
CO	30-60	42.2-46.7	56.4	49.6	15.6	23.91	1-14	4-14	27.4	31.03	45.3	39.09-43.44	13.89-20.14	59.9	39.7	35.6	57.2
H ₂	25-30	32.31-34.40	29.7	26.3	15.1	14.58	2-8	8-16	27.7	18.38	34.4	28.94-32.91	10.14-14.73	21.7	28.5	25.6	30.8
CO ₂	5-15	14.89-17.13	1.4	1.3	7.3	5.45	7-14	12-14	16.5	2.54	15.8	9.32-13.53	6.09-8.85	2.9	14.3	17.5	4.9
H ₂ O	2-30	-	7	18.1	61	5.45	6-14	17-40	26.6	11.77	-	13.11-19.91	8.18-12.00	-	12.6	14.4	-
CH ₄	0-5	1.04-2.29	-	-	-	1.35	1-2	2-5	0.0939	2.97	1.9	.02-.03	.02-.05	<0.1	4.3	6.1	6.2
Ar	0.2-1	-	0.7	0.6	0.8	0.56			0.7	0.51	0.6	0.06	.60-.66	14.4	.08	.07	-
N ₂	0.5-4	-	4.53	3.86		48.68	54-72	30-55	0.6	43.02	1.9	.41-.45	49.50-54.11		.09	.09	-
H ₂ S	0.2-1	17.28-107.2 ppm	0.24	0.21	0.12	-	100-1300 ppm	2000-3000 ppm	0.1399	1.48	68 ppm	.58-.64	.26-.32	1.1	750 ppmV	2007 ppmV	-
COS	0-0.1	9.03-162.13 ppm	0.02	2		-	-	-	0.0061	0.08	-	.03-.04	0.02		40 ppmV	106 ppmV	-
Others	0-0.3	-	0.01	0.01	0.08	0.02	-	-	0.2	-	-	-	-	-	-	-	-

- [Hydrogen from Coal Program: Research, Development, and Demonstration Plan for the period 2008 through 2016](#) [PDF-2.9MB] (Sept 2008)
- [Wabash River Coal Gasification Repowering Project: A DOE Assessment](#) [PDF-293KB] (Jan 2002)
- [An Overview of Coal based Integrated Gasification Combined Cycle \(IGCC\) Technology](#), Ola Maustad, MIT (Sept 2005) [PDF-595KB]
- The Gas Turbine Handbook: Principles and Practices, Tony Giampaolo, Edition: 2, illustrated, Published by The Fairmont Press, Inc., ISBN: 0881734136, 9780881734133 (2003)
- Demonstration of Hot Gas Filtration in Advanced Coal Gasification System, Xiaofeng Guan et. al, Power Systems Development Facility, Southern Company Services. ([ScienceDirect](#), formerly available [here](#)) (Mar 2007)
- [Technoeconomic Analysis of Hydrogen Production from Western Coal Augmented with CO₂ Sequestration and Coalbed Methane Recovery](#), Parrela Spath, et. al., National Renewable Energy Laboratory [PDF-107KB] (Fall 1999)
- Coal Gasification Pilot Plant for Hydrogen Production. Part B: Syngas Conversion and Hydrogen Separation, Giovanni Raggio, et. al., prepared for the Second International Conference on Clean Coal Technologies for our Future, (currently unavailable online) (May 2005)
- [Operating Experience at the Wabash River Coal Gasification Repowering Project](#), Thomas A Lynch, Dynegy Power Corp., prepared for the 1998 Gasification Technologies Conference (Oct 1998)
- [High Temperature Desulfurization of Synthesis Gas with Iron Compounds](#), Mitri S. Najjar & Dick Y. Jung, Texaco Inc. [PDF-96KB] (Fall 1993)
- [Uhde Press Release, No. 02](#), [PDF-2.2MB] (Mar 2008)
- [KBR's Transport Gasifier \(TRIG™\) – An Advanced Gasification Technology for SNG Production From Low-Ranked Coals](#)
- [Allied Syngas Marketing Document](#)