

IPA/CMU/TIMIT phone mappings and American English examples

Vowels and Diphthongs

IPA	CMU	TIMIT	Example	IPA symbol name
[ɑ]	AA	aa	f <u>ath</u> er, h <u>o</u> t	script a
[æ]	AE	ae	h <u>a</u> d	digraph
[ə]	AH0	ax	sof <u>a</u>	schwa (common in unstressed syllables)
[ʌ]	AH1	ah	b <u>u</u> t	turned v
[ɔ:]	AO	ao	ca <u>u</u> ght	open o – Note, many speakers of Am. Eng. do not distinguish between [ɔ:] and [ɑ]. If your “caught” and “cot” sound the same, you do not.
[ɛ]	EH	eh	h <u>e</u> ad	epsilon
[ɪ]	IH	ih	h <u>i</u> d	small capital I
[i:]	IY	iy	h <u>ee</u> d	lowercase i
[ʊ]	UH	uh	h <u>oo</u> d, b <u>oo</u> k	upsilon
[u:]	UW	uw	b <u>oo</u> t	lowercase u
[aɪ]	AY	ay	h <u>id</u> e	
[aʊ]	AW	aw	h <u>ow</u>	
[eɪ]	EY	ey	to <u>da</u> y	
[oʊ]	OW	ow	h <u>oe</u> d	
[ɔɪ]	OY	oy	jo <u>y</u> , aho <u>y</u>	
[ə̃]	ER0	axr	h <u>er</u> self	schwar (schwa changed by following r)
[ɜ̃]	ER1	er	b <u>ir</u> d	reverse epsilon right hook

Note that CMU and TIMIT uses 0 to denote unstressed, 1 to denote primary stress, 2 for secondary stress. Thus “materials” would be written [M AH0 T IH2 R IY0 EH1 L Z].

Consonants

Mappings for: [p b m t d n k g s z f v w h] are reasonably straight forward and can be deduced from looking at the CMU and TIMIT phone sets. Other consonants:

IPA	CMU	TIMIT	Example	IPA symbol name
[ŋ]	NG	ng	si <u>ng</u> so <u>ng</u>	eng or angma
[ʃ]	SH	<u>sh</u>	<u>sh</u> ee <u>t</u> , wi <u>sh</u>	esh or long s
[tʃ]	CH	<u>ch</u>	<u>ch</u> ee <u>s</u> e	
[j]	Y	y	y <u>e</u> llow	lowercase j
[ʒ]	ZJ	zh	vi <u>si</u> on	long z or yogh
[dʒ]	JH	jh	ju <u>d</u> ge	
[ð]	DH	dh	<u>th</u> ee, <u>th</u> is	eth

Compiled from:

- J.-L. Duchet, Carnegie Mellon Pronouncing Dictionary manual page,
<http://www.mshs.univ-poitiers.fr/Forell/PHONDICT/CMUDICT.HTM>.
- J. S. Garofol, L. F. Lamel, W. M. Fisher, J. G. Fiscus, and D. S. Pallett, *DARPA TIMIT Acoustic-Phonetic Continuous Speech Corpus CD-ROM Documentation*, NIST Speech Disc 1-1.1, February, 1993.
- P. Ladefoged, *A Course in Phonetics*, 4th edition, Heinle & Heinle, Boston, MA, 2001.