.WAV File Meta Data

There's a rumor that .wav files cannot have meta data, however, they can. Just like an .avi file a .wav file is a so-called "RIFF" file, and these files can have an "INFO" section which contains a series of sub sections called "chunks" which contain the meta data.

The cool thing about such "chunks" is that they can simply be ignored by the software reading the file if it doesn't understand them - a bit like how you can skip unknown tags in an XML file. This means that when old software reads a file written by new software, it can simply skip the unknown parts. Likewise, new software can read files written by old software and fill in the blanks itself. This way you get both forwards as backwards compatibility.

Some software use ID3 tags (from the mp3 format) to store meta data in .wav files, but this is an unfortunate choice because you do not get the compatibility benefits of using a chunk based format. Here's a short list of what chunks a .wav file with meta data can consist of. First the overall structure of a .wav file, where "...." represents 4 bytes that show the length of each "chunk":

RIFF....WAVE
  fmt ....*<binary format data, sample rate channels etc.>*
  data....*<raw audio data>*
LIST....INFO
  INAM....*TRACK TITLE*
  IPRD....*ALBUM TITLE*
  IART....*ARTIST NAME*
  ICMT....*COMMENTS*
  ICRD....*YEAR*
  IGNR....*GENRE*
  ITRK....*TRACK NUMBER*

Or explained in more detail...

Chunks in a .wav file

Main section	Chunk name	Purpose and contents
	Total RIFF structure container. This spans the entire file. The LIST elements sit inside this structure.	
RIFF…. WAVE	fmt	This section is typically 16 bytes long and contains the basic info about samplerate, number of channels etc. *This chunk is required.*
	data	The audio data itself. In order to be able to read this, you must have the data from the "fmt" chunk. *This chunk is required.*
	cue	A cue chunk specifies one or more sample offsets which are often used to mark noteworthy sections of audio.
	bext	Broadcast extension chunk. This optional chunk contains multiple pieces of information all crammed into the same binary block.

	Meta data	
LIST....INFO	INAM	Track title.
	IPRD	The album title.
	IART	The artist who created this.
	ICRD	The creation date in YYYY-MM-DD format, however you should expect to see just YYYY in this field.
	ITRK	Track number.
	ICMT	A text comment.
	IKEY	The keywords for the project or file.
	ISFT	The software used to create the file.
	IENG	The engineer.
	ITCH	The technician.
	IGNR	Genre of content.
	ICOP	The copyright information.
	ISBJ	The subject.
	IENG	The name(s) of the engineer. Multiple names separated by a semicolon and a blank.
	ISRC	Source: the name of the person or organization that supplied the original subject of the file.
	Markers	
LIST....adtl	labl	An entry in an array containing an a label or name which is associated with the cue points from the "cue " tag in order to provide names for the markers. It seems to sit in its own LIST/INFO section separate from the meta data.

Application support

Program name	Writes meta data?
SoundForge 11	Yes
Audacity 2.4.2	Yes
Ffmpeg (2020-08-24)	Yes
TagScanner 6.1.5	ID3 only
Samplitude Pro X4	Bext only
Sonoris ISRC Editor 1.0.3.0	ISRC only (discards other meta data)
WinAmp 5.666	No (but reads it)
Wavosaur 1.3.0.0	No
iZotope RX7 editor 7.01.315	No
Flac 1.3.3	No (--keep-foreign-metadata fails to transfer meta tags correctly)

Some of the software listed here may have changed since writing this list. "**Yes**" means that a LIST....INFO meta data section is written according to the official

specification. "**ID3**" means it only writes an mp3 format id3 tag standard instead of the .wav format's own meta data standard. "**Bext**" means it only writes Broadcast Extension section instead of the .wav format's own meta data standard.

Sources:

Download an example containing example meta data to see if your software reads this info correctly. More sources: recordingblogs.com or IBM & Microsoft's RIFF specification

Website by Joachim Michaelis
https://www.robotplanet.dk/audio/wav_meta_data/