

What's In An Apple?

This is an example of the many elements and compounds that have been identified in a domestic apple:

ABSCISIC-ACID	CAFFEETANNIN	ETHYL-HEXANOATE	P-HYDROXYBENZOIC-ACID
CIS-2, TRANS-4- ABSCISIC-ACID	CAFFEIC-ACID	ETHYL-ISOBUTYRATE	HYDROXYCINNAMIC-ACID
TRANS- ABSCISIC-ACID	CALCIUM	ETHYL-METHYLBUTYRATE	4-HYDROXYMETHYLPROLINE
ACETIC-ACID	CALCIUM-OXALATE	ETHYL-NONANOATE	3-HYDROXY-OCTYL-BETA-D-GLUCOSIDE
ACETIC-ACID-AMYL ESTER	CAPROALDEHYDE	ETHYL-OCTANOATE	HYPERIN
ACETALDEHYDE	CAPROIC-ACID-AMYL-ESTER	ETHYL-PENTANOATE	HYPEROSIDE
ACETONE	CAPRYLIC-ESTER	ETHYL-PHENACETATE	IDAEIN
ALPHA-ALANINE	CARBOHYDRATE	ETHYL-PROPIONATE	INOSITOL
BETA- ALANINE	BETA-CAROTENE	ETHYL-VALERIANATE	IODINE
ALANINE	CAROTENOIDS	FARNESENE	IRON
ALUMINUM	CATALASE	FAT	ISOAMYL-BUTYRATE
ALPHA-AMINOBUTYRIC-ACID	D-CATECHIN	FERULIC-ACID	ISOAMYL-PROPIONATE
AMMONIA	CHLOROGENIC-ACID	FIBER	ISOBUTYL-ACETATE
AMYL-ACETATE	CHLOROPHYLL	FLUORINE	ISOBUTYL-BUTYRATE
AMYL-BUTYRATE	CHROMIUM	FOLATE	ISOBUTYL-FORMATE
AMYL-PROPIONATE	CITRIC-ACID	FORMIC-ACID	ISOCITRIC-ACID
ANILINE	CITRAMALIC-ACID	FRUCTOSE	ISOLEUCINE
ARABINOSE	COBALT	FUMARIC-ACID	ISOPROPYL-BUTYRATE
ARGININE	COPPER	GALACTANASE	ISOQUERCITRIN
ARSENIC	COUMARIC-ACID	GALACTARIC-ACID	JASMONIC-ACID
ASCORBIC-ACID	P-COUMARIC-ACID	D-GALACTURONIC-ACID	KILOCALORIES
ASCORBIDASE	N-COUMARYL-QUINIC-ACID	GERANIOL	LACTIC-ACID
ASH	P-COUMARYL-QUINIC-ACID	D-GLUCITOL	LAURIC-ACID
ASPARAGINE	CUTIN	GLUCOCEREBROSIDE	LEAD
ASPARTIC-ACID	CYANIDIN-3-ARABINOSIDE	D-GLUCONIC-ACID	LECITHIN
AVICULARIN	CYANIDIN-7-ARABINOSIDE	GLUCOSE	LEUCINE
BARIUM	CYANIDIN-3-GALACTOSIDE	GLUTAMIC-ACID	LINOLINIC-ACID
BENZOIC-ACID	CYSTINE	GLUTAMINE	ALPHA-LINOLINIC-ACID
3,4-BENZOPYRENE	I-DECANOIC-ACID	GLYCERIC-ACID	LITHIUM
BENZYL-ACETATE	N-DECANOL	GLYCINE	LUTEIN
BENZYL-AMINE	DECENOIC-ACID	GLYCOLIC-ACID	LUTEOXANTHIN
BIOTIN	I-DECYL-ACETATE	GLYOXYLIC-ACID	LYSINE
BORON	DEHYDROASCORBIC-ACID	HEMICELLULOSE	MAGNESIUM
BROMINE	DIASTASE	HEPTACOSANE	L-MALIC-ACID
BUTANOL	DIETHYLAMINE	N-HEPTANOIC-ACID	MALVIDIN-MONOGLYCOSIDE
N-BUTANOL	DIGALACTOSYL-DIGYLCERIDE	HEPTENOIC-ACID	MANGANESE
1-BUTANOL	DIHYDROXYTRICARBALLYLIC-ACID	2-HEPTANOL	MANNOSE
2-BUTANOL	DIPHOSPHATIDYL-GLYCEROL	N-HEPTANOL	MERCURY
BUTYL- ACETATE	ESSENTIAL OIL	N-HEX-1-EN-3-OL	METHANOL
BUTYL- BUTYRATE	L-EPICATECHIN	CIS-N-HEX-3-EN-1-OL	METHIONINE
BUTYL-CAPROATE	5,6-EPOXY-10'-APO-5,6-	TRANS-N-HEX-2-EN-1-OL	METHYL-ACETATE
BUTYL- PROPIONATE	DIHYDRO- BETA-CAROTENE-	TRANS-N-HEX-3-EN-1-OL	METHYL-2-XI-ACETOXY-20-BETA-HYDROXY-URSONATE
BUTYL-VALERIANATE	3,10'DIOL	HEXACOSANOL	METHYLAMINE
I-BUTYL-OCTANOATE	ETHANOL	2-HEXENAL	2-METHYL-BUT-2-EN-1-AL
I-BUTYL- PROPIONATE	ETHYL-ACETATE	TRANS-2-HEXENOIC-ACID	2-METHYL-BUT-3-EN-1-OL
N-BUTYL-DECANOATE	ETHYLAMINE	HEXYL-ACETATE	D-2-METHYLBUTAN-1-OL
N-BUTYL-FORMATE	ETHYL-BUTYRATE	HEXYL-BUTYRATE	2-METHYLBUTAN-2-OL
N-BUTYL-N-HEXANOATE	ETHYL-CAPROATE	HEXYL-FORMATE	METHYL-BUTYRATE
N-BUTYL-OCTANOATE	ETHYL-CROTONATE	N-HEXYL-N-HEXANOATE	METHYL-CAPROATE
N-BUTYL- PROPIONATE	ETHYL-DECENOATE	N-HEXYL-OCTANOATE	
CADMIUM	ETHYL-DODECANOATE	N-HEXYL-PROPIONATE	
		HISTIDINE	

2-METHYL-2,3-EPOXY-PENTANE	1-OCTYL-ACETATE	PHOSPHATIDYL-GLYCEROL	RIBOFLAVIN
METHYL-FORMATE	OLEIC-ACID	PHOSPHATIDYL-INOSITOL	RUBIDIUM
6-METHYL-HEPTEN-5-EN-2-ONE	OXALIC-ACID	PHOSPHATIDYL-SERINE	RUTIN
METHYL-HEXANOATE	OXALOACETIC-ACID	PHOSPHORUS	SELENIUM
N-METHYL-BETA-PHENETHYLAMINE	ALPHA-OXOGLUTARIC-ACID	PHYTOSTEROLS	SERINE
METHYL-PROPIONATE	PALMITIC-ACID	PIPECOLINIC-ACID	SFA
METHYL-2-METHYL-BUTYRATE	PALMITOLEIC-ACID	POLYGALACTOSYL-DIGLYCERIDE	SHIKIMIC-ACID
METHYL-I-PENTANOATE	PANTOTHENIC-ACID	POLYGALACTURONASE	SILICON
METHYL-N-PENTANOATE	PECTASE	POLYPHENOLASE	SILVER
2-METHYLPENTAN-2-OL	PECTIN	POTASSIUM	SINAPIC-ACID
N-METHYL-PHENETHYLAMINE	PECTIN-DEMETHOXYXYLASE	PROLINE	SODIUM
GAMMA-METHYL-PROLINE	N-PENTANOIC-ACID	2-PROPANOL	STEARIC-ACID
2-METHYL-PROPEN-1-AL	I-PENTANOIC-ACID	N-PROPANOL	STRONTIUM
METHYL-VINYL-KETONE	PENTANOL	I-PROPANOL	SUCCINIC-ACID
MEVALONIC-ACID	1-PENTANOL	N-PROPIONIC-ACID	SUCROSE
MOLYBDENUM	2-PENTANOL	PROPYL-ACETATE	SUGAR
MONOGALACTOSYL-DIGLYCERIDE	3-PENTANOL	PROPYL-BUTYRATE	SULFUR
MUFA	N-PETENOIC-ACID	PROPYL-FORMATE	THIAMIN
MYRISTIC-ACID	N-PENTYL-AMINE	PROPYL-2-METHYLBUTYRATE	THREONINE
NEO-CHLOROGENIC-ACID	PENTYL-BUTYRATE	PROPYL-N-PENTANOATE	TITANIUM
NEOXANTHIN	N-PENTYL-FORMATE	PROPYL-PROPIONATE	ALPHA-TOCOPHEROL
NIACIN	I-PENTYL-FORMATE	PROTEIN	TRIACTANOL
NICKEL	PENTYL-HEXANOATE	PROTocatechuic-ACID	TRIGLYCERIDE
NITROGEN	N-PENTYL-2-METHYLBUTYRATE	PUFA	1,3,3-TRIMETHYL-DIOXA-2,7-BICYCLO(2,2,1)HEPTANE
NONACOSANE	I-PENTYL-I-PENTANOATE	PYRROLIDINE	TRYPTOPHAN
D-L-NONACOSANOL	N-PENTYL-OCTANOATE	PYROXIDINE	TYROSINE
N-NONANOIC-ACID	PEROXIDASE	PYRUVIC-ACID	URONIC-ACID
N-NONANOL-2-NONANOL	2-PHENETHYLACETATE	QUERCETIN	URSOLIC-ACID
NONENOIC-ACID	PHENOLICS	QUERCETIN-ARABINOSIDE	VALINE
1-NONYL-ACETATE	PHENYLALANINE	QUERCETIN-3-O-ALPHA-GALACTOSIDE	VITAMIN B6
OCTACOSANOL	PHLORETAMIDE	QUERCETIN-3-RUTINOSIDE	VOMIFOLIOL-1-O-BETA-D-GLUCOPY-RANOSIDE
N-OCTANONE	PHLORETIN-4'-O-BETA-D-GLUCOPY-RANOSIDE	QUERCETIN-3-RHAMNOGLUCOSIDE	WATER
N-OCTANOL-2-OCTANOL	PHLORIZIN GLYCOSURIC	QUERCETIN-3-O-XYLOSIDE	XYLOSE
OCTENOIC-ACID	PHOSPHATIDYLIC-ACID	QUERCITRIN	ZINC
	PHOSPHATIDYL-CHOLINE	L-QUINIC-ACID	ZIRCONIUM
	PHOSPHATIDYL-ETHANOLAMINE	REYNOUTRIN	

Reference: Duke, J.A., *Malus domestica* Borkh. *Handbook of Phytochemical Constituents of GRAS Herbs and Other Economic Plants*, CRC Press, 2001, Boca Raton, FL.