

# Cigarette Additives, Carcinogens and Chemicals

## Nicotine

### A Destructive Natural Pesticide Which ...

Is extremely addictive when smoked

Causes addiction as permanent as alcoholism

Is not medicine and its use not therapy

Prevents pre-cancerous cells from dying

Contributes to artery hardening

May kill brain cells and impair memory

Likely causes brain damage and depression

Kills half of adult smokers 13-14 years early

Is extremely addictive when chewed

Is harder to quit than heroin or cocaine

Is ineffective as a stand-alone quitting aid

Accelerates cancer tumor growth rates

Has a metabolite which may cause cancer

Is linked to lung cancer

Is also a fetus destroying teratogen

Is beat by never taking another puff or chew!



## 81 Cancer Causing Chemicals Have So Far Been Identified in Cigarettes

Acetaldehyde

Acetamide

Acrylamide

Acrylonitrile

2-Amino-3,4-dimethyl-3H-imidazo[4,5-f]quinoline (MeIQ)

3-Amino-1,4-dimethyl-5H-pyrido [4,3-b]indole (Trp-P-1)

2-Amino-1-methyl-6-phenyl-1H-imidazo [4,5-b]pyridine (PhIP)

2-Amino-6-methyldipyrido[1,2-a:3',2'-d]imidazole (Glu-P-1)

3-Amino-1-methyl-5H-pyrido {4,3-b}indole (Trp-P-2)

2-Amino-3-methyl-9H-pyrido[2,3-b]indole (MeAaC)

2-Amino-9H-pyrido[2,3-b]indole (AaC)

4-Aminobiphenyl

2-Aminodipyrido[1,2-a:3',2'-d]imidazole (Glu-P-2)

O-Anisidine

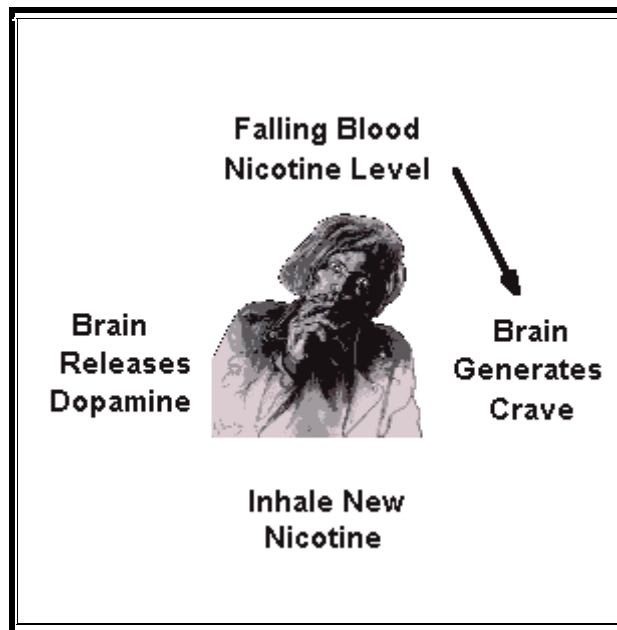
Arsenic

Benz[a]anthracene  
Benzene  
Benzo[a]pyrene  
Benzo[b]fluoranthene  
Benzo[j]fluoranthene  
Benzo[k]fluoranthene  
Benzo[b]furan  
Beryllium  
1,3-Butadiene  
Cadmium  
Catechol (1,2-benzenediol)  
p-Chloroaniline  
Chloroform  
Cobalt  
p,p'-DDT  
Dibenz[a,h]acridine  
Dibenz[a,j]acridine  
Dibenz(a,h)anthracene  
7H-Dibenzo[c,g]carbazole  
Dibenzo(a,e)pyrene  
Dibenzo(a,i)pyrene  
Dibenzo(a,h)pyrene  
Dibenzo(a,i)pyrene  
Dibenzo(a,l)pyrene  
3,4-Dihydroxycinnamic acid (caffeic acid)  
Ethylbenzene  
Ethylene oxide  
Formaldehyde  
Furan  
Glycidol

Heptachlor  
Hydrazine  
Indeno[1,2,3-cd]pyrene  
IQ 92-Amino-3-methyl-3H-imidazo[4,5-f]quinoline)  
Isoprene  
Lead  
5-Methyl-chrysene  
2-Naphthylamine  
Nitrobenzene  
Nitrogen mustard  
Nitromethane  
2-Nitropropane  
N-Nitrosodi-n-butylamine (NDBA)  
N-Nitrosodi-n-propylamine (NDPA)  
N-Nitrosodiethanolamine (NDELA)  
N-Nitrosodiethylamine (DEN)  
N-Nitrosodimethylamine (DMN)  
N-Nitrosoethylmethylamine (NEMA, MEN)  
4-(N-Nitrosomethylamino)-1-(3-pyridinyl)-1-butanone (NNK)  
N'-Nitrosornicotine (NNN)  
N-Nitrosopiperidine (NPIP, NPP)  
N-Nitrosopyrrolidine (NPYR, NPY)  
Polonium-210 (Radon 222)  
Propylene oxide  
Safrole  
Styrene  
Tetrachloroethylene  
o-Toluidine (2-methylaniline)  
Trichloroethylene  
Urethane (carbamic acid, ethyl ester)

Vinyl acetate  
Vinyl chloride  
4-Vinylcyclohexene  
2,6-Xylidine (2,6-dimethylaniline)

Source: World Health Organization's  
International Agency for Research on Cancer - (IARC)  
June 2003



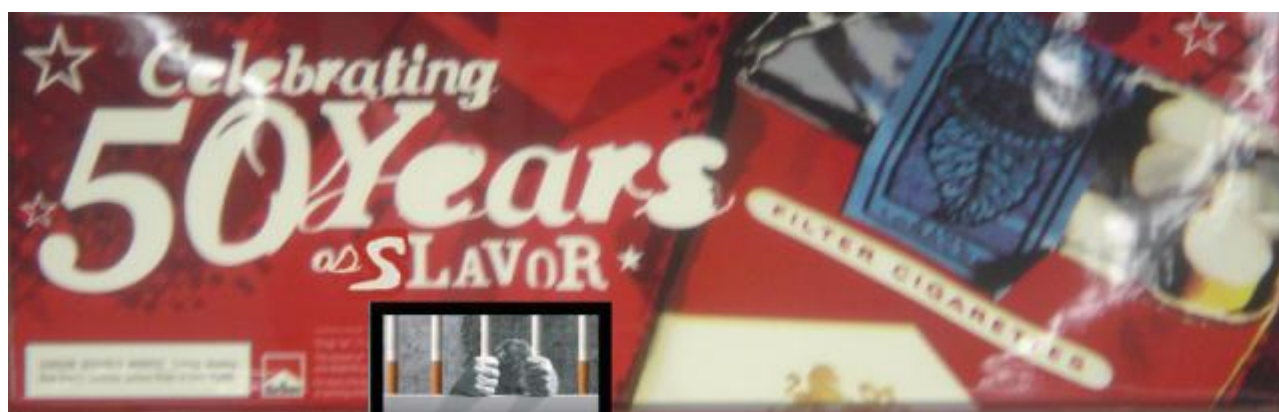
## **Plus 4,000 Extra Chemicals in Each and Every Puff Including ...**

Acenaphthene	Acetamide	Acridine	Acrolein
Acrylamide	Aluminum	Ammonia	Anabasine
Anatabine	Aniline	Anodmine	Anthanthrene
Anthracene	Arachidic acid	Argon	Arsenic
Azapyrene	Azulene	Benzimidazole	Beryllium
Bipyridyl	Butadiene	Butane	Butylbenzene
Caffeic acid	Campesterol	Caproic acid	Caprylic acid
Captan	Carboline	Carbon monoxide	Carbon oxysulfide

Carotene	Catechol	Copper	Cresol
Chrysene	Cichoriin	Cobalt	Collidine
Copper	Coronene	Cotinine	Coumarin
Crotonaldehyde	Cyanogen	Cycloartenol	Dibenzo
Diethyl ketone	DDT/Dieldrin	Dipentene	Ergosterol
Esculetin	Ethane	Ethanol	Ethylamine
Ethylene	Ethylphenois	Eugenol	Ferulic acid
Fluoranthene	Fluorene	Formic acid	Furan
Furfural	Furoic acid	Glutamic acid	Glycolic acid
Guaiacol	Gudham	Harman	Heptylic acid
Hexamine	Hydrazine	Hydrogen cyanide	Hydrogen sulfide
Hydrogen thiocyanide	Hydroquinone	Indole	Ionene
Iron	Isobutane	Isobutylene	Isobutyraldehyde
Isobutyric acid	Isoprene	Isopropylbenzene	Isoquinoline
Isosqualene	Ketoglutaric acid	Lathrein	Lauric acid
Levantenolide	Levulinic acid	Limonene	Linoleic acid
Lohitam	Lutidine	Magnesium	Maleic anhydride
Malic acid	Malonic acid	Mercury	Mesitol
Methane	Methanol	Methylamine	Methyleugenol
Methylglyoxal	Myosmine	Myristic acid	Napthalene
Nickel	Nicotinamide	Nicotinic acid	Nicotrine
Nicotyrine	Nitrobenzene	Nitrogen oxides	Nitromethane
Nonylic acid	Nomicotine	Nornicotyrine	Norphytene
Obeline	Oleic acid	Oxalic acid	Palmitic acid
Palmitoleic acid	Palmitone	Perylene	Phenanthrene
Phenanthridine	Phthalic acid	Phytadienes	Phytol
Phytone	Picoline	Plastoquinone	Poikiline
Potassium	Propane	Propionaldehyde	Propionic acid
Propylbenzene	Propylene	Pyndine	Pyrene
Pyridine	Pyrrole	Pyrrolidine	Pyruvic acid

Quinoline	Quinoxalilne	Reductic acid	Resin acid
Resorcinol	Scopoletin	Scopolin	Socratine
Silicon	Sitosterol	Skatole	Sodium
Solanenes	Solanone	Squalene	Stigmasterol
Stearic acid	Strontium	Styrene	Thiocyanogen
Titanium	Toluene	Trimethylamine	Triphenylene
Velic acid	Xylenols	Zinc	

Source: List of Known ETS Constituents, California Air Resources Board



## Plus Almost 700 Tobacco Company Flavor and Engineering Additives

**Each brand contains one or more of the following additives**

Acacia gum	Acetic acid	Acetyl pyrazine	Aluminium citrate
Acetoin	Acetone	Acetophenone	Acetoxydihydrotheaspirane
Acetal	Acetyl pyridine	Acetyl pyridine	Acetyl methyl cellulose
Alanine	Aconitic acid	Alfalfa extract	Allyl ionone
Alga resinoid	Allspice extract	Allspice leaf oil	Allura Red
Allyl hexanoate	Aluminium tartrate	Aluminium acetate	Aluminium carbonate
Acetanisole	Aluminium oxide	Aluminium lactate	Aluminium phosphate

Almond oil	Aluminosilicates	Aluminium hydroxide	Aluminium trihydroxide
Amber oil	Ambergris extract	Ambrette seed oil	Ammonium hydroxide
Apple juice	Ammonium citrate	Ammonium chloride	Ammonium carbonate
Ambrox	Ammonium lactate	Ammonium sulphate	Ammonium dihydrogen phosphate
Amyl acetate	Amyl alcohol	Amyl benzoate	Ammonium tartrate
Amyl butyrate	Amyl formate	Amyl hexanoate <sup>2</sup>	Amyl cinnamaldehyde
Anise star	Amyl octanoate <sup>2</sup>	Amyl phenylacetate	Amyl salicylate <sup>2</sup>
Anethole	Amyl valerate	Anise and oil	Angelica root extract and oil
Amyris oil	Ammonium acetate	Amyl isovalerate	Anisyl alcohol
Anisole	Arachis oil	Ascorbic acid	para-Anisyl acetate
Azorubin	Balsam oil	Beech tar extract	Bay leaf, oil and sweet oil
Basil oil	Beet juice	Bisabolene	Black current buds
Bentonite	Benzaldehyde	Benzoic acid	Benzyl benzoate
Benzoin	Benzoin resinoid	Benzyl acetate	Benzyl alcohol
Beeswax	Benzyl butyrate	Benzyl cinnamate	Benzyl formate
Bergamot oil	Benzyl propionate	Benzyl isobutyrate	Benzyl phenylacetate
Boric acid	Bornyl acetate	Brilliant Black BN	Brilliant Blue FCF
Carmel	Bitter and sweet	Buchu leaf oil	Butyl alcohol
Borneol	Butanedoil	Butanol	Butylene glycol
Butanone	Butyl acetate	Butyl butyrate	Butyl phenyl acetate
Butter	Butyl isovalerate	Butyl undecylenate	Butylidene-phthalide
Cadinene	Butyric acid	Cajeput oil	Butyl pyridine
Cananga oil	Calcium chloride	Calcium citrate	Calcium hydroxide
Caffeine	Calcium acetate	Calcium Carbonate	Capsicum oleoresin
Camphene	Calcium lactate	Calcium phosphate	Calcium tartrate
d-Camphor	Camphor oil	Carbon dioxide	Carob bean extract
Caramel	Caraway oil	Cardamon oleoresin	Carboxy methyl cellulose
Carvacrol	Carrot seed oil	Caryophyllene	Carvomenthenol
Carvone	Cascarilla oil	Caryophyllene oxide	Caryophyllene alcohol
Castor oil	Cassia bark oil	Cassia extract	Castoreum extract
Cocoa	Cedarwood oil	Cellulose fibre	Cedryl acetate
Cedrol	Cedar leaf oil	Cellulose acetate	Celery seed extract
Chlorophyll	Cinnamaldehyde	Chamomile flower oil	Cellulose alkanoylalkanoates
Chocolate	Chicory extract	Cinnamyl alcohol	Dandelion root extract
Cinnamic acid	Cinnamon leaf oil	Cinnamon leaf extract	Cinnamyl acetate
Cubeb oil	Cinnamyl butyrate	Cinnamyl cinnamate	Cinnamyl isobutyrate
Citral	Citric acid	Citronella oil	Cinnamyl isovalerate
Citronella	Citronellic acid	Citronellyl acetate	Citronellyl butyrate
Citronellol	Citronellyl formate	Citronellyl isobutyrate	Citronellyl phenylacetate



Civet absolute	Clary sage oil	Clove oil	Citronellyl propionate
Coffee extract	Cognac oil	Coriander oil	Diethylpyrazine
Corn oil	Corn syrup	Corn silk	Costus root oil
Cumin	Cuminaldehyde	para-Cymene	Cyclamen aldehyde
Cypress oil	Davana oil	Damascone	Damascenone
Decanal	Decanoic acid	delta-Decalactone	gamma-Decalactone
Dextrin	Diacetyl	Diatomaceous earth	Diammonium hydrogen phos.
Dibenzyl ether	Diethyl sebacate	Dihydroactinidiolide	Diethyl methyl pyrazine
Decenal	Cubeb oil	Dihydrocoumarin	Dimethoxybenzene
Deconal	Diethyl Malonate	Dihydrocarvyl acetate	Dehydromenthofuro lactone
Dodecalactone	Dimethylpyrazine	Dimethylpyrazine	Dimethyltetrahydrobenzofuranone
Dill seed oil	Furaneol	Syringol	Benzyl dimethyl carbinyl acetate
Elemene	Diphenyl ether	Dimethyl pyrazine	Benzyl dimethyl carbinyl butyrate
Ethyl cinnamate	Dimethyl phenol	Dipotassium succinate	Dimethyl cyclopentenolone
Elemol	Erythrosine	Dimethyl pyrazine	Methyl-para-tolyl carbinol
Estragole	Dodecalactone	Dimethyl pyridine	Dimethyl phenylethyl isobutyrate
Ethanol	Ethyl acetate	Dodecalactone	Dimethyl styrene
Ethyl acrylate	Ethyl benzoate	Ethyl butyrate	Ethyl-3,5-dimethyl pyrazine
Ethyl cellulose	Ethyl decanoate	Ethyl heptanoate	Ethyl hydroxy methyl furanone
Ethyl formate	Ethyl guaiacol	Ethyl hexanoate	Ethyl-2,5-dimethyl pyrazine
Ethyl lactate	Ethyl laurate	Ethyl isovalerate	Ethyl vinyl acetate copolymer
Ethyl maltol	Ethyl myristate	Ethyl-cyclopentenolone	Ethyl hydroxy ethyl cellulose
Ethyl nonanoate	Ethyl octanoate	Ethyl palmitate	Ethyl-2-methyl butyrate
D-Fenchone	Ethyl propionate	Ethyl phenylacetate	Ethyl octadecanoate
Ethyl oleate	Ethyl pyridine	Ethyl phenol	Ethyl-2-methylpyrazine
Ethyl salicylate	Ethyl valerate	Ethyl-10-undecenoate	Ethyl phenyl acetate
Eucalyptol	Ethyl vanillin	Eucalyptus oil	Eugenyl methyl ether
Eugenol	Farnesol	Fennel sweet oil	Formic acid
Fenugreek	Fructose	Apples	Geranyl isobutyrate
Bananas	Blackberries	Blackcurrants	Geranyl phenyl acetate
Dates	Fig juice	Grape juice	Geranyl propionate
Pears	Pineapples	Plums	Ginger oil
Raisins	Raspberry	Strawberry	Furfuryl thioformate
Geraniol	Geranium rose oil	Furfural alcohol	Furfuryl methyl sulphide
Prunes	Geranyl acetate	Gentian root extract	Glycerol-1,2-diacetate
Peaches	Geranyl acetone	Geranyl butyrate	Glyceryl triacetate

Cherry	Geranyl formate	Glucose	Guaiac gum extract
Galbanum oil	Genet	Geraniol	Glycyrrhizin ammoniated
Apricots	Glycerol	Glyoxal	Guaiac wood oil
Guaiacol	Guaiol acetate	Guar gum	Gum tragacanth
Heptanone	Heptadienal	Heptalactone	Hexadecenlactone
Heptenal	Heptanoic acid	Hexanedione	gamma-Hexalactone
Hexanoic acid	Leaf alcohol	Hexen-2-al	Hex-2-enyl acetate
Hexyl acetate	Hexyl alcohol	Hexenyl acetate	Hexyl phenyl acetate
Honey	Humic acid	Hydrochloric acid	Hydroxy benzoic acid
Hexanal	Histidine	Hydroxycitronellal	Hydrolyzed milk solids
Hops oil	Hydroxycitronello l	Hydroxyisophorone	Hydroxybutanoic acid lactone
Hyssop oil	Isoamyl acetate	Isoamyl benzoate	Hydroxypropyl cellulose
Indigotine	Immortelle oil	Isoamyl butyrate	(p-Hydroxyphenol)butanone
Indole	alpha-Ionone	beta-Ionone	Isobutylphenyl acetate
Iron	Isoamyl alcohol	Isobornyl acetate	Isoamyl cinnamate
Isobutyl acetate	Isobutyl alcohol	Isobutyl butyrate	Isobutyl-3-methoxypyrazine
Iron oxides	Isobutyraldehyde	Isobutyl cinnamate	Isobutyl phenethyl alcohol
Isophorone	Isoamyl octanoate	Isoamyl isovalerate	Isoamyl phenylacetate
Isoeugenol	Isobutyric acid	4-Keto isophorone	Isoeugenyl methyl ether
Isopulegol	Isobutyl acetate	Isobutyl alcohol	Isobutyl cinnamate
Isopentane	Isoamyl formate	Isopropyl alcohol	4-Keto dihydroisophorone
Labdanum	Octanoic acid	Isobornyl acetate	Isopropyl myristate
Jasmine	Lactic acid	Isovaleric acid	Juniper berry oil
Leucine	Lavandin oil	Lauric aldehyde	Kola nut extract
Lecithin	Lemon oil	Lauric acid	Lavender oil
Licorice	Linalool oxide	Lemongrass oil	Linalyl butyrate
Linalool	Lime oil	Linaloe wood oil	Linalyl acetate
Limonene	Linalyl formate	Linalyl isobutyrate	Liquid Paraffin BP
Lovage oil	Longosa oil	Locust bean gum	Magnesium acetate
Mace	Magnesium chloride	Magnesium carbonate	Magnesium hydroxide
Maltol	Magnesium oxide	Magnesium lactate	Magnesium phosphate
Malic acid	Linden flowers	Maltodextrin	Methoxy benzaldehyde
Malt	Methyl acetate	Magnesium citrate	Methoxy cinnamaldehyde
Menthol	Mate distillate	Menthyl isovalerate	Mentha-1,8-dien-7-ol
Mandarin oil	Menthyl acetate	Mercaptomenthanone	Methoxy cinnamaldehyde
Maple syrup	Methyl guaiacol	Magnesium tartrate	Methoxy methyl pyrazine
Methyl anisate	Methyl anisole	Methoxy vinylphenol	(para-Methoxyphenyl)propanone
Nerolidol	Methyl cellulose	Methyl acetophenone	alpha-Methyl benzyl acetate

Nerol	Methyl cinnamate	Methyl butyraldehyde	Methyl benzyl alcohol
Mimosa	Methyl butyric acid	Methyl butyraldehyde	Methyl cyclopentenolone
Myrcene	Methyl linoleate	Methyl ethyl ketone	Methyl-3,5-heptadienone
Mint oil	Methyl linolenate	Methyl heptanoic acid	Methyl hydroxy ethyl cellulose
Mate leaf	Methyl mercaptan	Methyl hexanoic acid	Methyl hydroxy propyl cellulose
Mandarin oil	Methyl thiosilvane	Methyl pentanoic acid	Methyl-beta-naphthylketone
Musk pod	Methyl sulphide	Methyl quinoxaline	Methyl-1-cyclopentadecanone
Jasmone	Mullein flowers	Methyl undecanal	Methyl-hept-5-en-2-one
Methone	Wild mint oil	Garden mint oil	Methyl-4-phenyl butyraldehyde
Maltodextrin	Methyl pyrazine	Methyl salicylate	Methyl-2-pyrrolyl ketone
Molasses	Musk ketone	Methyl phenyl acetate	Naphthyl methyl ether
Myrrh	Methyl furfural	Methyl isovalerate	Naphthyl ethyl ether
Neroli oil	Nonadien-1-ol	Methyl benzoate	gamma-Nonalactone
Mountain maple	Mullein flowers	Myristaldehyde	Myristic acid
Nonanal	Nonenal	Nonanoic acid	Octalactone
Nutmeg	Oak moss	Oak bark extract	Octanoic acid
Octano	Octanone	Octen-3-ol	Opopanax oil
Octenal	Octyl acetate	Olibanum oil	Olive oil
Orange leaf	Orange blossoms	Orange oil	Orange peel oil
Origanum oil	Orris root	Palmarosa oil	Palmitic acid
Oleic acid	Opopanax oil	Peruvian oil	Pimenta leaf oil
Patchouli oil	Pigment Yellow 13	Parsley seed oil	Peach kernel oil
Pectin	Pentane	Pent-3-en-4-olide	omega-Pentadecalactone
Pepper oil	Peppermint oil	Pentanedione	Pigment Red 184
Petitgrain oil	Phenethyl acetate	Phenethyl alcohol	Phenethyl isobutyrate
Patent Blue V	Phenethyl valerate	Phenethyl isovalerate	Phenethyl phenylacetate
Pyridine	Phenyl acetic acid	Phenyl acetaldehyde	Phenyl-3-buten-2-one
Pinene	Phenyl-1-propanol	Phenyl propionic acid <sup>2</sup>	Phenyl propionaldehyde <sup>2</sup>
Piperonal	Potassium sorbate	Phosphoric acid	Phenylpropyl acetate
Ponceau 4R	Polyvinyl alcohol	Potassium carbonate	Polyvinyl acetate homo-polymer
Plumb juice	Pine needle oil	Potassium chloride	Pipsissewa leaf extract
Pyrrole	Sodium chloride	Potassium hydroxide	Polyv. acetate alcohol copolymer
Propane	Potassium phosphate	Propenyl guaethol	Propionic acid
Propyl acetate	Propyl alcohol	Propyl butyrate	Propyl phenyl acetate
Propylene glycol	Pyruvic acid	Pyroligneous acid	Ropylidenephthalide
Rhodinol	Toasting flavors	Quebracho bark	Rhodinyl acetate
Rose water	Rose oil	Rosemary oil	Rum ether

Saccharin	Saffron	Sage oil	Salicylaldehyde
Rye extract	Sclareolide	Smoke flavor	Sodium bisulphate
Shellac	Sandalwood oil	Silicic acid	Sodium alginate
Skatole	Sodium carbonate	Sodium bicarbonate	Sodium hydroxide
Sorbic acid	Sodium phosphate	Spearmint oil	Spike lavender oil
Snakeroot oil	Sodium acetate	Sodium chloride	Sodium citrate
Sorbitol	Spiranol	Whisky	Brandy
Rum	Starch	Star anise oil	Styrax gum
Sucrose syrup	Tamarind extract	Sunset Yellow FCF	Tannic acid
Solanone	Tangerine oil	Sugar alcohols	Sugars
Tarragon oil	Tartaric acid	Tartrazine Yellow	Tea resinoid
Terpineol	Terpinyl acetate	Tetrahydroquinoxaline	Menthofuran
Rose oxide	Thiabendazole	Red thyme oil	Tetramethyl pyrazine
Thymol	White thyme oil	Titanium dioxide	Tobacco extracts
Tolualdehydes	Tolyl acetate	Tolu balsam gum	Tolyl-3-methylbutyrate
Tagetes oil	Triacetin	Thiazole	Threonine
Triethyl citrate	Tolyl phenylacetate	Trichlorofluoromethane	Undecalactone
Tuberosc oil	Turpentine oil	Triethylene glycol	Trimethyl cyclohexanone
Undecanal	Urea	Trimethyl pyrazine	Valeraldehyde-N
Vinegar	Valine	Wild cherry bark	Xanthan gum
Valerian root	Valeric acid	Valerolactone	Vanilla beans and extract
Vanillin	Veratraldehyde	Vetiver oil	Violet oil
Violet leaf	Walnut extractables	Wheat extract	Wine
Wine sherry	Ylang Ylang oil	Xylenol	Yeast

Sources: Permitted Additives to Tobacco Products in the United Kingdom, U.K. Dept. of Health, Oct. 2003; Ingredients in Cigarettes, Philip Morris International, 2004; Brown & Williamson, 599 Tobacco Additives

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