List of prohibited substances in tobacco products and electronic cigarettes

The following list represents, by way of example, those substances or categories of substances that currently fall under the statutory prohibitions of the Austrian Tobacco and Non-Smoker Protection Act (TNRSG), but does not constitute an exhaustive list.

Prohibited ingredients in nicotine-containing electronic cigarettes and refill containers		
Substance categories including the legal basis for the ban		Examples
1.	**Vitamins or other additives that create the impression that a tobacco product has a health benefit or presents reduced health risks. (Article 10b(7) No 3 in conjunction with Article 8b(2) No 1 of the TNRSG)**	
1.1	Vitamins listed in the 'Union list' annex to Regulation (EU) No 609/2013, as amended, in accordance with Article 15 thereof.	
1.2	Amino acids and their derivatives	
1.3	Analgesics	
1.4	Components, including processed components, extracts and oils of the **hemp plant**	
1.5	Cannabinoids (natural or synthetic in origin)	Cannabidiol
		THC
		HHC
1.6	Hormones and hormone-like substances	Melatonin
1.7	Flavonoids and phospholipids with antioxidative effects	Naringin
1.8	Others	Choline
		Choline chloride
		Choline hydroxide
		Choline citrate
		Choline tartrate
		Betaine
		S-Adenosyl Methionine
		L-5-Hydroxytryptophan
		Carnitine
		L-carnitine
		L-carnitine hydrochloride
		L-carnitine-L-tartrate
		Sodium selenite
2.	**Caffeine or taurine or other additives and stimulant compounds that are associated with energy and vitality, (Article 10b(7) No 3 in conjunction with Article 8b(2) No 2 of the TNRSG)**	
2.1	Components, including processed components, extracts and oils, of the **coffee plant** and of **coffee beans**	
2.2	Components, including processed components, extracts and oils of the **tea plant** Camellia sinensis (L.) Kuntze	
2.3	Components, including processed components, extracts and oils, of the **guarana plant**	
2.4	Components, including processed components, extracts and oils of the **yerba mate**	
2.5	Components, including processed components, extracts and oils of the **kola tree** or the **kola nut**	
2.6	Sugar	Glucose
		Fructose
		Galactose
		Sucrose
		Lactose
		Maltose
2.7	Others	Maltodextrin
		Inositol
3.	**Additives having colouring properties for emissions. (Article 10b(7) No 3 in conjunction with Article 8b(2) No 3 of the TNRSG)**	

Prohibited ingredients in nicotine-containing and nicotine-free electronic cigarettes and refill containers			
Substance categories including the legal basis for the ban		Examples	Further justification for the ban
1. Additives that have CMR properties in unburned form. (Article 10b(7) No 3 in conjunction with Article 8b(2) No 5 of the TNRSG; Article 10b(7) No 5 of the TNRSG)			
1.1 Substances classified in accordance with Part 3 of Annex VI to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2006, p. 1), as last amended by Regulation (EU) 2016/1179 (OJ L 195, 20.7.2016, p. 11), as **CMR substances of category 1A, 1B, 2 or Lact.**			
1.2 Substances classified according to the list of classifications by the International Agency for Research on Cancer (**IARC**) with regard to carcinogenic effects in humans in **Groups 1, 2A, or 2B**.			
1.3 Substances classified as either 'known' or 'reasonably anticipated' to be human carcinogens by the United States' National Toxicology Program (NTP)			
1.4 Substances which, according to the **MAK and BAT values list** (published by the Deutsche Forschungsgemeinschaft (DFG)), have been classified by the MAK Commission as having carcinogenic effects in categories 1, 2, 4, or 5, as teratogenic effects in categories A, B, or C, and as germ cell mutagenic effects in categories 1, 2, 3A, or 3B.			
1.5 Substances classified as carcinogenic, mutagenic, or reprotoxic by the European Food Safety Authority (EFSA).			
1.1 - 1.5 Examples		Isophorone	
		Pyridine	
		Myrcene	
		Chrysene	
		Benzo(a)anthracene	
		Benzo(b)fluoranthene	
		Titanium dioxide	
		Methyl eugenol	
		Safrole	
		Estragole	
1.6 Substances with effects on the reproductive system	Parabens	Propylparaben (para hydroxybenzoic acid propyl ester)	Certain parabens show *in vivo* reprotoxic effects. References: SCCS (Scientific Committee on Consumer Safety) (2021). Opinion on Propylparaben (CAS No 94-13-3, EC No 202-307-7), preliminary version of 27-28 October 2020, final version of 30-31 March 2021, SCCS/1623/20 https://health.ec.europa.eu/document/download/7c416df0-2650-4d7a-82f7-650081bf250c en?filename=sccs o 243.pdf EFSA (European Food Safety Authority) (2004). Opinion of the Scientific Panel on food additives, flavourings, processing aids and materials in contact with food (AFC) related to para hydroxybenzoates (E 214-219). EFSA Journal DOI: https://doi.org/10.2903/j.efsa.2004.83
		Sodium propylparaben	
		Potassium propylparaben	
		Butylparaben	
		Sodium butylparaben	
		Potassium butylparaben	
		Isobutylparaben	
		Sodium isobutylparaben	
1.7 Sassafras		Sassafras oil	Contains safrole.
		Sassafras wood	
		Sassafras leaves	
		Sassafras bark	

2.	**Ingredients (except for nicotine in nicotine-containing liquids) that pose a risk to human health in heated or unheated form. (Article 10b(7) No 5 of the TNRSG)**		
2.1	Substances that have CMR properties in unburnt form. (See point 1)		
2.2	Substances classified in accordance with Part 3 of Annex VI to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2006, p. 1), as last amended by Regulation (EU) 2016/1179 (OJ L 195, 20.7.2016, p. 11), as **respiratory sensitising (Resp. Sens. 1)**.		
2.3	Substances listed in **Annex III**, Part A, of Regulation (EC) No 1334/2008 of the European Parliament and of the Council of 16 December 2008 on **flavourings** and certain food ingredients with flavouring properties for use in and on foods and their updates are listed	Agaric acid Aloin Capsaicin 1,2-benzopyrone, coumarin Hypericin Beta-Asarone 1-allyl-4-methoxybenzene, estragole Hydrocyanic acid Menthofuran 4-allyl-1,2-dimethoxybenzene, methyl eugenol Pulegone Quassin 1-allyl-3,4-methylenedioxybenzene, safrole Teucrin A Thujone (alpha and beta)	
2.4	Substances which, according to the **MAK and BAT values list** (published by the Deutsche Forschungsgesellschaft (DFG) are classified by the MAK Commission as **substantive allergens** ('Sa', 'Sah').		
2.5	Processed components, extracts and oils derived from the **pennyroyal** plant		Pennyroyal contains pulegone, a hepatotoxic substance. References: European Food Safety Authority (2008). Pulegone and Menthofuran in flavourings - Opinion of the Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in contact with Food (AFC). EFSA Journal 6(3): 298 DOI: https://doi.org/10.2903/j.efsa.2008.298 Gordon Perry and Khojasteh S. Cyrus (2015). A decades-long investigation of acute metabolism-based hepatotoxicity by herbal constituents: a case study of pennyroyal oil. Drug Metabolism Reviews 47(1): 12-20 DOI: 10.3109/03602532.2014.990032. https://doi.org/10.3109/03602532.2014.990032

2.6	Oily/greasy substances such as saturated or unsaturated free fatty acids and their derivatives; alkanes, alkenes and alkynes with a carbon chain length of 12 or more; mono-, di-, and triglycerides; waxes	MCT (medium chain triglycerides) Squalane Squalene	Inhalation or aspiration of lipids (fatty/oily substances) is considered the central cause of the development of exogenous lipid pneumonia (chronic pneumonia). Exogenous lipid pneumonia can be triggered by mineral oils as well as by oily/fatty substances of animal and plant origin. Since the scientific explanations always refer to oils and fats or oily and fatty substances in general, the oily/fatty character, rather than a specific composition of the substance, should be decisive for the adverse health effect (Hadda and Khilnani 2010, M. Schwaiblmair et al. 2010, Nguyen and Oh 2013). References: Hadda Vijay and Khilnani Gopi C. (2010). Lipoid pneumonia: an overview. Expert Review of Respiratory Medicine 4(6): 799-807 https://doi.org/10.1586/ers.10.74 Nguyen Christopher D and Oh Scott S (2013). A Case of Exogenous Lipoid Pneumonia. Respiratory Care 58(3): e23-e27 DOI: 10.4187)respcare.01727. https://rc.rcjournal.com/content/respcare/58/3/e23.full.pdf M. Schwaiblmair, et al. (2010). Lipid pneumonia – an underestimated syndrome? Dtsch Med Wochenschr 2010; 135(1/02): 27-31 DOI: 10.1055/s- 0029-1244813. https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0029-1244813 Lee Jin Seong, et al. (1998). Squalene Aspiration Pneumonia: Thin-Section CT and Histopathologic Findings1. jkrs 38(3): 453-458 DOI: 10.3348/jkrs.1998.38.3.453. http://dx.doi.org/10.3348/jkrs.1998.38.3.453
2.7	Rosin, resin or resin acids	Abietic acid Pimaric acid Isopimaric acid Palustric acid Levopimaric acid	Resin fumes are classified as respiratory sensitisers and possible triggers for asthma. References: HSE Health and Safety Executive (2001). Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma. https://www.hse.gov.uk/asthma/asthmagen.pdf

2.8 Vitamin E acetate		Vitamin E acetate is closely related to the 2019 outbreak of EVALI (e-cigarette, or vaping, product use associated lung injury) in the United States. References: CDC (Centers for Disease Control and Prevention): Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products (https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html) Blount Benjamin C., et al. (2019). Vitamin E Acetate in Bronchoalveolar-Lavage Fluid Associated with EVALI. New England Journal of Medicine 382(8): 697-705 DOI: 10.1056/NEJMoa1916433.https://www.nejm.org/doi/full/10.1056/NEJMoa191643 3
2.9 Diacetyl and certain structural analogues	Diacetyl 2,3-Pentadione 2,3-Hexadione 2,3-Heptadione	Diacetyl and 2,3-pentadione can cause severe inflammation and respiratory diseases upon inhalation. As a precautionary measure, an extension of the ban to include the structural analogues 2,3-hexadione and 2,3-heptadione is recommended. References: MAK-Kommission (2015) 'Diacetyl [MAK Value Documentation in German Language, 2015].' The MAK-Collection for Occupational Health and Safety, 1-42 DOI: https://doi.org/10.1002/3527600418.mb43103d0058. MAK-Kommission (2017) '2,3-Pentandion [MAK Value Documentation in German language, 2017]. ' The MAK-Collection for Occupational Health and Safety, 135160 DOI: https://doi.org/10.1002/3527600418.mb60014d0062. BfR (German Federal Institute for Risk Assessment) (2015). Health assessment of additives for tobacco products and electronic cigarettes. (in German: 'Gesundheitliche Bewertung von Zusatzstoffen für Tabakerzeugnisse und elektronische Zigaretten.') BfR Opinion no. 045/2015 of 30 July 2015. https://www.bfr.bund.de/cm/343/gesundheitliche-bewertung-von-zusatzstoffen-fuer-tabakerzeugnisse-und-elektronische-zigaretten.pdf
2.10 Bitter almond oil		Bitter almond oil can naturally contain hydrocyanic acid. Hydrocyanic acid is a powerful poison that can paralyse the central respiratory system. References: MAK Commission (2001). Hydrogen cyanide, potassium and sodium cyanide [MAK Value Documentation in German language, 2001]. The MAK-Collection for Occupational Health and Safety: 1-19 DOI: https://doi.org/10.1002/3527600418.mb7490verd0032.https://onlinelibrary.wiley .com/doi/abs/10.1002/3527600418. mb7490verd0032

Prohibited ingredients in tobacco products		
Substance categories including the legal basis for the ban	Examples	Further justification for the ban
1. Vitamins or other additives that create the impression that a tobacco product has a health benefit or presents reduced health risks. (Article 8b(2) No 1 of the TNRSG)		
1.1 Vitamins listed in the 'Union list' annex to Regulation (EU) No 609/2013, as amended, in accordance with Article 15 thereof.		
1.2 Amino acids and their derivatives		
1.3 Analgesics		
1.4 Components, including processed components, extracts and oils of the **hemp plant**		
1.5 Cannabinoids (natural or synthetic in origin)	Cannabidiol	
	THC	
	HHC	
1.6 Hormones and hormone-like substances	Melatonin	
1.7 Flavonoids and phospholipids with antioxidative effects	Naringin	
1.8 Others	Choline	
	Choline chloride	
	Choline hydroxide	
	Choline citrate	
	Choline tartrate	
	Betaine	
	S-Adenosyl Methionine	
	L-5-Hydroxytryptophan	
	Carnitine	
	L-carnitine	
	L-carnitine hydrochloride	
	L-carnitine-L-tartrate	
	Sodium selenite	
2. Caffeine or taurine or other additives and stimulant compounds that are associated with energy and vitality, (Article 8b(2) No 2 of the TNRSG)		
2.1 Components, including processed components, extracts and oils, of the **coffee plant** and of **coffee beans**		
2.2 Components, including processed components, extracts and oils of the **tea plant** Camellia sinensis (L.) Kuntze		
2.3 Components, including processed components, extracts and oils, of the **guarana plant**		
2.4 Components, including processed components, extracts and oils of the **yerba mate**		
2.5 Components, including processed components, extracts and oils of the **kola tree** or the **kola nut**		
2.6 Others	Maltodextrin	
	Inositol	
3. Additives having colouring properties for emissions. (Article 8b(2) No 3 of the TNRSG)		

4.	Additives that facilitate inhalation or nicotine uptake for tobacco products (Article 8b(2) No 4 of the TNRSG)			
4.1	Menthol and analogues, TRPM-8 agonists, 'cooling compounds', 'synthetic coolants'	p-Menthane-3-substituted and modified compounds		All substances or mixtures with cooling or analgesic effects are considered substances that facilitate inhalation. Reference: Joint Action on Tobacco control WP9: D9.3 Report on the peer review of the enhanced reporting information on priority additives. RIVM, BfR, ANSES, NIPH, ISS and the WP 9 Independent Review Panel Date: 3 December 2020 Doc. Ref. No: D9.3 https://jaotc.eu/wp-content/uploads/2021/04/D9.3-Report-on-the-peer-review-of-the-enhanced-reporting-information-on-priority-additives.pdf
		p-Menthane-3-carboxamide incl. p-Menthane-3-N-alkylcarboxamide and p-Menthane-3-N-arylcarboxamide		
		p-Menthane-3-ester		
		p-Menthane-3-ether		
		p-Menthane-3-carboxylic acids and their esters		
		Other p-Menthane-3-substituted and modified compounds		
		p-Menthane alcohols and their esters		
		Examples	N-Ethyl-p-menthane-3-carboxamide (WS-3)	
			2-Isopropyl-5-methyl-cyclohexanecarboxylic acid (4-methoxyphenyl) amide (WS-12)	
			(1R,2S,5R)-N-((ethoxycarbonyl)methyl)-p-menthane-3-carboxamide (WS-5)	
			N-tert-butyl-p-menthane-3-carboxamide (WS-14)	
			2-Isopropyl-N,2,3-trimethylbutyramide (WS-23)	
			N-(p-menthane-3-carbonyl)-D-alanine ethyl ester (CPS- 369, WS-109)	
			N-(4-fluorophenyl)-p-menthane-3-carboxamide (CPS- 124)	
			CPS-125	
			N-(4-ethoxyphenyl)-p-menthane-3-carboxamide (CPS- 128)	
			CPS-368	
			Menthyl lactate	
			Menthoxypropane-1,2-diol	
			2-Isopropyl-5-methylcyclohexanecarboxylic acid 2,3-dihydroxy-propyl ester (WS-30)	
			Menthone 1,2-glycerol ketal (Frescolat MGA)	
			Monomenthyl succinate (Frescolat ML)	
			Menthyl-3-hydroxybutyrate	
			Menthyl acetate	
			Menthol ethylene glycol carbonate (Frescolat MGC)	
			2,3-Dihydroxypropyl p-menthane-3-carboxylate (WS-30)	
			Cis-p-menthane-3,8-diol (PMD38)	
			Icilin / Cooling Agent AG-3-5 (3,4-Dihydro-3-(2-hydroxyphenyl)-6-(3-nitrophenyl)-(1H)-pyrimidin-2-one)	
			2-Isopropyl-N 2,3-trimethylbutyramide	
			Isopulegol	
			1-(Di-sec-butyl-phosphinoyl)-heptane (W-148, CPS-148)	
			5-methyl-4-(1-pyrolidinyl)-3-2H-furanone	
			Menthol	
			(-)-Menthol	
			(+)-Menthol	
			Menthone	
			(-)-Menthone	
			(+)-Menthone	
			L-carvone	
			Geraniol	
			Linalool	
			1,8-Cineole (eucalyptol)	
			1,4-Cineole	
			Hydroxycitronellal	

4.2	Components, including processed components, extracts and oils of plants	Mentha		
		Eucalyptus		
		Ocimum		
		Thymus		
		Salvia		
4.3	Nicotine salts		Nicotine benzoate	Nicotine salts can be absorbed into the body more quickly when inhaled and cause less irritation than nicotine in free form. References: O'Connell Grant, et al. (2019). A randomised, open-label, cross-over clinical study to evaluate the pharmacokinetic profiles of cigarettes and e-cigarettes with nicotine salt formulations in US adult smokers. Internal and emergency medicine 14(6): 853-861 DOI: 10.1007/s11739-019-02025-3.https://www.ncbi.nlm.nih.gov/pubmed/30712148 Caldwell Brent, et al. (2012). A Systematic Review of Nicotine by Inhalation: Is There a Role for the Inhaled Route? Nicotine & Tobacco Research 14(10): 1127-1139 DOI: 10.1093/ntr/nts009.https://doi.org/10.1093/ntr/nts009 Leventhal A. M., et al. (2021). Effect of Exposure to e-Cigarettes With Salt vs Free-Base Nicotine on the Appeal and Sensory Experience of Vaping: A Randomized Clinical Trial. JAMA Netw Open 4(1): e2032757 DOI: 10.1001/jamanetworkopen.2020.32757
			Nicotine ditartrate	
			Nicotine lactate	
			Nicotine levulinate	
			Nicotine malate	
			Nicotine salicylate	

5.	**Additives that have CMR properties in unburned form. (Article 10b(7) No 3 in conjunction with Article 8b(2) No 5 of the TNRSG)**		
5.1	Substances classified in accordance with Part 3 of Annex VI to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2006, p. 1), as last amended by Regulation (EU) 2016/1179 (OJ L 195, 20.7.2016, p. 11), as **CMR substances of category 1A, 1B, 2 or Lact.**		
5.2	Substances classified according to the list of classifications by the International Agency for Research on Cancer (**IARC**) with regard to carcinogenic effects in humans in **Groups 1, 2A, or 2B**.		
5.3	Substances classified as either 'known' or 'reasonably anticipated' to be human carcinogens by the United States' National Toxicology Program (NTP)		
5.4	Substances which, according to the **MAK and BAT values list** (published by the Deutsche Forschungsgemeinschaft (DFG)), have been classified by the MAK Commission as having carcinogenic effects in categories 1, 2, 4, or 5, as teratogenic effects in categories A, B, or C, and as germ cell mutagenic effects in categories 1, 2, 3A, or 3B.		
5.5	Substances classified as carcinogenic, mutagenic, or reprotoxic by the European Food Safety Authority (EFSA).		
5.1 - 5.5	Examples	Isophorone	
		Pyridine	
		Myrcene	
		Chrysene	
		Benzo(a)anthracene	
		Benzo(b)fluoranthene	
		Titanium dioxide	
		Methyl eugenol	
		Safrole	
		Estragole	
5.6	Substances with effects on the Reproductive system – Parabens	Propylparaben (para-hydroxybenzoic acid propyl ester)	Certain parabens show *in vivo* reprotoxic effects. References: SCCS (Scientific Committee on Consumer Safety) (2021). Opinion on Propylparaben (CAS No 94-13-3, EC No 202-307-7), preliminary version of 27-28 October 2020, final version of 30-31 March 2021, SCCS/1623/20 https://health.ec.europa.eu/document/download/7c416df0-2650-4d7a-82f7-650081bf250c_en?filename=sccs_o_243.pdf EFSA (European Food Safety Authority) (2004). Opinion of the Scientific Panel on food additives, flavourings, processing aids and materials in contact with food (AFC) related to para hydroxybenzoates (E 214-219). EFSA Journal DOI: https://doi.org/10.2903/j.efsa.2004.83
		Sodium propylparaben	
		Potassium propylparaben	
		Butylparaben	
		Sodium butylparaben	
		Potassium butylparaben	
		Isobutylparaben	
		Sodium isobutylparaben	
5.7	Sassafras	Sassafras oil	Contains safrole.
		Sassafras wood	
		Sassafras leaves	
		Sassafras bark	