

## Potential Allergens in Routinely Recommended Vaccines

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Allergic reactions to vaccine are rare. Ingredients within vaccines that can lead to potential allergic reactions are few and, in some cases of allergic reaction, it is unclear to which ingredient a person may have reacted. The components on this table are vaccine ingredients that are suspected to have caused allergic reactions in vaccine recipients, however rare. Allergic reactions are immune mediated, either via IgE, or non-IgE dependent mechanisms, delayed type hypersensitivity or T cell mediated. Not all reactions are anaphylaxis, the most severe form of allergy. Allergic reactions may occur at the site of inoculation (e.g. dermatitis) or be a delayed hypersensitivity leading to induration/nodule formation. Also, Polysorbate 80, while not known to cause an allergy, can lead to a histamine release that may appear to be like an allergy. Increasingly, allergens have been removed from vaccines to the extent possible so individuals with a history of allergic reactions can safely get them, e.g. Egg proteins in influenza vaccines.

Excipient	Purpose	Vaccine Name	Vaccine Type	Amount per 0.5 mL Dose (unless otherwise noted)
Polysorbate 80	Surfactant	Abrysvo	RSV	0.08 mg
Bovine Casein	Medium Nutrient	ActHIB	Hib	Amount not specified in package insert
2-Phenoxyethanol	Stabilizer	Adacel	Tdap	3.3 mg (0.6% v/v) (not as a preservative)
Aluminum Phosphate	Adjuvant	Adacel	Tdap	1.5 mg (0.33 mg aluminum)
Bovine, Casamino Acid	Stabilizer	Adacel	Tdap	Amount not specified in package insert
Albumin, Egg (Ovalbumin)	Residual Medium	Afluria	Influenza	≤1 mcg
Neomycin Sulfate	Antimicrobial	Afluria	Influenza	≤61.5 ng
Polymyxin B	Antimicrobial	Afluria	Influenza	≤10.5 ng
Sodium Taurodeoxycholate	Protein Purifier	Afluria	Influenza	≤10 ppm (residual)
Thimerosal	Preservative	Afluria	Influenza	24.5 mcg mercury only in multi-dose vial; none in single dose
Polysorbate 80	Surfactant	AREXVY	RSV	0.18 mg
Aluminum Hydroxide	Adjuvant	Bexsero	Meningococcal B	1.5 mg (0.519 mg aluminum)
Aluminum Hydroxide	Adjuvant	Boostrix	Tdap	≤0.3 mg aluminum
Bovine Casein	Medium Nutrient	Boostrix	Tdap	Amount not specified in package insert
Bovine Extract	Medium Nutrient	Boostrix	Tdap	Amount not specified in package insert
Polysorbate 80	Surfactant	Boostrix	Tdap	≤100 mcg (Tween 80)
Polysorbate 20	Surfactant	Capvaxive	Pneumococcal 21	0.50 mg
Yeast	Medium Nutrient	Capvaxive	Pneumococcal 21	Amount not specified in package insert
Polyethylene Glycol	Lipid	Comirnaty (Pfizer)	COVID-19	0.05 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide/0.3 mL dose
2-Phenoxyethanol	Stabilizer	Daptacel	DTaP	3.3 mg (0.6% v/v) (not as a preservative)
Aluminum Phosphate	Adjuvant	Daptacel	DTaP	1.5 mg (0.33 mg aluminum)
Bovine, Casamino Acid	Stabilizer	Daptacel	DTaP	Amount not specified in package insert
Aluminum Phosphate	Adjuvant	DT	DT	1.5 mg
Bovine Casein	Medium Nutrient	DT	DT	Amount not specified in package insert
Aluminum	Adjuvant	Engerix-B	HepB	0.5 mg/mL aluminum as aluminum hydroxide
Yeast	Medium Nutrient	Engerix-B	HepB	≤5% yeast protein
Egg Protein (ovalbumin)	Residual Medium	Fluad	Influenza	<0.4 mcg
Neomycin	Antimicrobial	Fluad	Influenza	≤0.02 mcg
Polysorbate 80	Surfactant	Fluad	Influenza	1.175 mg
Albumin, Egg (Ovalbumin)	Residual Medium	Fluarix	Influenza	≤0.05 mcg
Gentamicin Sulfate	Antimicrobial	Fluarix	Influenza	≤0.15 mcg
Polysorbate 80 (Tween 80)	Surfactant	Fluarix	Influenza	≤0.415 mg (Tween 80)
Polysorbate 20	Surfactant	Flublok	Influenza	≤27.5 mcg (Tween 20)
Polysorbate 80 (Tween 80)	Surfactant	Flucelvax	Influenza	≤1125 mcg (Tween 80)
Thimerosal	Preservative	Flucelvax	Influenza	<25 mcg mercury only in multi-dose vial; none in single dose
Albumin, Egg (Ovalbumin)	Residual Medium	Flulaval	Influenza	≤0.3 mcg
Polysorbate 80	Surfactant	Flulaval	Influenza	≤665 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	FluMist	Influenza	≤0.024 mcg/0.2mL dose
Gelatin, Porcine, Hydrolyzed	Stabilizer	FluMist	Influenza	2.00 mg/0.2 mL dose
Gentamicin Sulfate	Antimicrobial	FluMist	Influenza	<0.015 mcg/mL
Albumin, Egg (Ovalbumin)	Residual Medium	Fluvirin	Influenza	≤1 mcg
Neomycin	Antimicrobial	Fluvirin	Influenza	≤2.5 mcg
Polymyxin	Antimicrobial	Fluvirin	Influenza	≤3.75 mcg
Thimerosal	Preservative	Fluvirin	Influenza	25 mcg mercury/dose in multi-dose vial; ≤1 mcg/dose mercury in prefilled syringe
Thimerosal	Preservative	FluZone	Influenza	25 mcg mercury in multi-dose vial; none in single dose
Aluminum	Adjuvant	Gardasil	HPV	225 mcg as amorphous aluminum hydroxyphosphate sulfate
Polysorbate 80	Surfactant	Gardasil	HPV	50 mcg
Yeast	Medium Nutrient	Gardasil	HPV	<7 mcg yeast protein
Aluminum	Adjuvant	Gardasil 9	HPV	500 mcg as amorphous aluminum hydroxyphosphate sulfate
Polysorbate 80	Surfactant	Gardasil 9	HPV	50 mcg
Yeast	Medium Nutrient	Gardasil 9	HPV	<7 mcg yeast protein
Aluminum	Adjuvant	Havrix	HepA	0.25 mg (as aluminum hydroxide)

Neomycin Sulfate	Antimicrobial	Havrix	HepA	≤40 ng/mL
Polysorbate 20	Surfactant	Havrix	HepA	0.05 mg/mL
Polysorbate 80	Surfactant	Hepelisav-B	HepB	0.1 mg/mL
Yeast	Medium Nutrient	Hepelisav-B	HepB	Yeast protein: ≤5.0% of total protein (residual) Yeast DNA: <20 pg
Aluminum Hydroxide	Adjuvant	Infanrix	DTaP	0.5 mg aluminum
Bovine Casein	Medium Nutrient	Infanrix	DTaP	Amount not specified in package insert
Bovine Extract	Stabilizer	Infanrix	DTaP	Amount not specified in package insert
Polysorbate 80	Surfactant	Infanrix	DTaP	≤100 mcg (Tween 80)
Albumin, Bovine Serum	Stabilizer	Kinrix	DTaP+IPV	VERO cell culture growth
Aluminum Hydroxide	Adjuvant	Kinrix	DTaP+IPV	≤0.5 mg aluminum
Bovine Casein	Medium Nutrient	Kinrix	DTaP+IPV	Amount not specified in package insert
Bovine Extract	Stabilizer	Kinrix	DTaP+IPV	Amount not specified in package insert
Neomycin	Antimicrobial	Kinrix	DTaP+IPV	≤0.05 ng
Polymyxin B	Antimicrobial	Kinrix	DTaP+IPV	≤0.01 ng
Polysorbate 80	Surfactant	Kinrix	DTaP+IPV	≤100 mcg (Tween 80)
Bovine Casein	Medium Nutrient	Menactra	Meningococcal ACYW-135	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Menactra	Meningococcal ACYW-135	Amount not specified in package insert
Yeast	Medium Nutrient	Menveo	Meningococcal ACYW-135	Amount not specified in package insert
Albumin, Bovine Serum	Stabilizer	MMR-II	MMR	<1 ppm
Gelatin, hydrolyzed	Stabilizer	MMR-II	MMR	14.5 mg
Neomycin	Antimicrobial	MMR-II	MMR	25 mcg
Polyethylene Glycol	Lipids	mResvia	RSV	<1.02 mg 2000 dimyristoyl glycerol [PEG2000-DMG]
Lentil Lectin	Residual Byproduct	Novavax	COVID-19	< 0.025 mcg
Methyl-A-D-Mannopyranoside	Residual Byproduct	Novavax	COVID-19	2 mcg
Pluronic F-68	Residual Byproduct	Novavax	COVID-19	< 2.19 mcg
Polysorbate 80	Surfactant	Novavax	COVID-19	0.050 mg
Albumin, Bovine Serum	Stabilizer	Pediarix	DTaP+HepB+IPV	VERO cell culture growth
Aluminum	Adjuvant	Pediarix	DTaP+HepB+IPV	≤0.7 mg
Bovine Casein	Medium Nutrient	Pediarix	DTaP+HepB+IPV	Amount not specified in package insert
Bovine Extract	Stabilizer	Pediarix	DTaP+HepB+IPV	Amount not specified in package insert
Neomycin	Antimicrobial	Pediarix	DTaP+HepB+IPV	≤0.05 ng
Polymyxin B	Antimicrobial	Pediarix	DTaP+HepB+IPV	≤0.01 ng
Polysorbate 80	Surfactant	Pediarix	DTaP+HepB+IPV	≤100 mcg (Tween 80)
Yeast	Medium Nutrient	Pediarix	DTaP+HepB+IPV	≤5% yeast protein
Aluminum	Adjuvant	PedvaxHIB	Hib+HepB	225 mcg
Aluminum Phosphate	Adjuvant	Penbraya	Meningococcal ACYW-135	0.25 mg aluminum
Polysorbate 80	Surfactant	Penbraya	Meningococcal ACYW-135	0.018 mg at pH 6.0
Yeast	Medium Nutrient	Penbraya	Meningococcal ACYW-135	Amount not specified in package insert
2-Phenoxyethanol	Stabilizer	Pentacel	DTaP+IPV+Hib	3.3 mg (0.6 v/v) (not as a preservative)
Albumin, Bovine Serum	Stabilizer	Pentacel	DTaP+IPV+Hib	≤10 ng
Aluminum Phosphate	Adjuvant	Pentacel	DTaP+IPV+Hib	1.5 mg (0.33 mg aluminum)
Bovine, Casamino Acid	Stabilizer	Pentacel	DTaP+IPV+Hib	Amount not specified in package insert
Neomycin	Antimicrobial	Pentacel	DTaP+IPV+Hib	<0.01 pg
Polymyxin B	Antimicrobial	Pentacel	DTaP+IPV+Hib	<0.000001 pg
Polysorbate 80	Surfactant	Pentacel	DTaP+IPV+Hib	<8.1 mcg
Albumin, Bovine Serum	Stabilizer	Prehevbrio	HepB	<2.5 ng/mL
Aluminum Hydroxide	Adjuvant	Prehevbrio	HepB	0.5 mg/mL aluminum
Aluminum	Adjuvant	Prevnar 13	Pneumococcal 13	125 mcg
Bovine, Casamino Acid	Stabilizer	Prevnar 13	Pneumococcal 13	Amount not specified in package insert
Polysorbate 80	Surfactant	Prevnar 13	Pneumococcal 13	100 mcg
Yeast	Medium Nutrient	Prevnar 13	Pneumococcal 13	Ingredient in growth medium
Aluminum	Adjuvant	Prevnar 20	Pneumococcal 20	125 mcg as aluminum phosphate
Bovine, Casamino Acid	Stabilizer	Prevnar 20	Pneumococcal 20	Amount not specified in package insert
Polysorbate 80	Surfactant	Prevnar 20	Pneumococcal 20	100 mcg
Yeast	Medium Nutrient	Prevnar 20	Pneumococcal 20	Ingredient in growth medium
Albumin, Bovine serum	Stabilizer	Priorix	MMR	≤50 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Priorix	MMR	≤60 mcg
Neomycin Sulfate	Antimicrobial	Priorix	MMR	≤25 mcg
Albumin, Bovine serum	Stabilizer	ProQuad	MMRV	≤0.5 mcg
Gelatin, hydrolyzed	Stabilizer	ProQuad	MMRV	11 mg
Neomycin	Antimicrobial	ProQuad	MMRV	<16 mcg
2-Phenoxyethanol	Stabilizer	Quadracel	DTaP+IPV	3.3 mg (0.6 v/v) (not as a preservative)

Albumin, Bovine Serum	Stabilizer	Quadracel	DTaP+IPV	≤50 ng
Aluminum Phosphate	Adjuvant	Quadracel	DTaP+IPV	1.5 mg (0.33 mg aluminum)
Bovine, Casamino Acid	Stabilizer	Quadracel	DTaP+IPV	Amount not specified in package insert
Neomycin	Antimicrobial	Quadracel	DTaP+IPV	<4 pg
Polymyxin B Sulfate	Antimicrobial	Quadracel	DTaP+IPV	<4 pg
Polysorbate 80	Surfactant	Quadracel	DTaP+IPV	10 ppm
Aluminum	Adjuvant	Recombivax HB	HepB	0.5 mg/mL
Yeast	Medium Nutrient	Recombivax HB	HepB	<1% yeast protein
Porcine DNA	Residual Medium	Rotarix	Rotavirus	PCV-1
Albumin, Bovine Serum	Stabilizer	RotaTeq	Rotavirus	Trace amounts
Polysorbate 80	Surfactant	RotaTeq	Rotavirus	Amount not specified in package insert
Polysorbate 80	Surfactant	Shingrix	Zoster	0.08 mg
Polyethylene Glycol	Lipid	Spikevax (Moderna)	COVID-19	1.01 mg (SM-102, polyethylene glycol [PEG] 2000 dimyristoyl glycerol [DMG])
Aluminum	Adjuvant	TDVax	Tetanus+Diphtheria	≤0.53mg
Bovine Extract	Stabilizer	TDVax	Tetanus+Diphtheria	Amount not specified in package insert
Thimerosal	Manufacturing Residue	TDVax	Tetanus+Diphtheria	≤0.3 mcg mercury (trace amounts)
Aluminum	Adjuvant	Tenivac	Tetanus+Diphtheria	0.33 mg
Bovine, Casamino Acid	Stabilizer	Tenivac	Tetanus+Diphtheria	Amount not specified in package insert
Aluminum	Adjuvant	Trumenba	Meningococcal B	0.25 mg
Polysorbate 80	Surfactant	Trumenba	Meningococcal B	0.018 mg
Aluminum Phosphate and Aluminum Hydroxide	Adjuvant	Twinrix	HepA+HepB	0.45 mg/mL aluminum
Neomycin Sulfate	Antimicrobial	Twinrix	HepA+HepB	≤20 ng/mL
Polysorbate 20	Surfactant	Twinrix	HepA+HepB	Amount not specified in package insert
Yeast	Medium Nutrient	Twinrix	HepA+HepB	≤5% yeast protein
Albumin, Bovine	Stabilizer	Vaqta	HepA	<10 <sup>-4</sup> mcg
Aluminum	Adjuvant	Vaqta	HepA	0.45 mg/mL as amorphous aluminum hydroxyphosphate sulfate
Neomycin	Antimicrobial	Vaqta	HepA	<10 ppb (residual)
Albumin, Bovine Serum	Stabilizer	Varivax	Varicella	Trace amounts
Gelatin, hydrolyzed	Stabilizer	Varivax	Varicella	12.5 mg
Neomycin	Antimicrobial	Varivax	Varicella	Trace amounts
Albumin, Bovine Serum	Stabilizer	Vaxelis	DTaP+IPV+Hib+HepB	≤50 ng
Aluminum	Adjuvant	Vaxelis	DTaP+IPV+Hib+HepB	319 mcg aluminum from aluminum salts
Neomycin	Antimicrobial	Vaxelis	DTaP+IPV+Hib+HepB	<5 ng
Polymyxin B Sulfate	Antimicrobial	Vaxelis	DTaP+IPV+Hib+HepB	<25 ng
Polysorbate 80	Surfactant	Vaxelis	DTaP+IPV+Hib+HepB	<0.0056%
Streptomycin sulfate	Manufacturing Residue	Vaxelis	DTaP+IPV+Hib+HepB	<200 ng
Yeast	Medium Nutrient	Vaxelis	DTaP+IPV+Hib+HepB	≤0.1 mcg
Aluminum	Adjuvant	Vaxneuvance	Pneumococcal 15	125 mcg aluminum as aluminum phosphate adjuvant
Polysorbate 20	Surfactant	Vaxneuvance	Pneumococcal 15	1 mg
Yeast	Medium Nutrient	Vaxneuvance	Pneumococcal 15	Amount not specified in package insert
Albumin, Bovine	Stabilizer	Zostavax	Varicella Zoster	Trace amounts
Gelatin, Porcine, Hydrolyzed	Stabilizer	Zostavax	Varicella Zoster	15.58 mg/0.65 mL dose
Neomycin	Antimicrobial	Zostavax	Varicella Zoster	Trace amounts

This information is correct to the best of our knowledge. Please report inaccuracies to us at [info@hopkinsvaccine.org](mailto:info@hopkinsvaccine.org).

Table was last updated on February 21, 2025 | © 2025 Institute for Vaccine Safety