

# Vaccine Excipients by Excipient

updated December 2024

Excipient	Purpose	Vaccine Name	Vaccine Type	Amount per 0.5 mL Dose (unless otherwise noted)
(4-hydroxybutyl)azanediyl bis(hexane-6,1-diyl)bis(2-hexyldecanoate)	Lipid	Comirnaty (Pfizer)	COVID-19	0.43 mg/0.3 mL dose
1,2-distearoyl-sn-glycero-3-phosphocholine [DSPC]	Lipids	mResvia	RSV	<1.02 mg
1,2-distearoyl-sn-glycero-3-phosphocholine [DSPC]	Lipid	Comirnaty (Pfizer)	COVID-19	0.09 mg/0.3 mL dose
1,2-distearoyl-sn-glycero-3-phosphocholine [DSPC]	Lipid	Spikevax (Moderna)	COVID-19	Amount not specified in package insert
2-Phenoxyethanol	Stabilizer	Adacel	Tdap	3.3 mg (0.6% v/v) (not as a preservative)
2-Phenoxyethanol	Stabilizer	Daptacel	DTaP	3.3 mg (0.6% v/v) (not as a preservative)
2-Phenoxyethanol	Stabilizer	Pentacel	DTaP+IPV+Hib	3.3 mg (0.6 v/v) (not as a preservative)
2-Phenoxyethanol	Stabilizer	Quadracel	DTaP+IPV	3.3 mg (0.6 v/v) (not as a preservative)
Acetic Acid	Adjust pH	mResvia	RSV	0.021 mg
Acetic Acid	Adjust pH	Spikevax (Moderna)	COVID-19	0.021 mg
Albumin, Bovine	Stabilizer	Vaqta	HepA	<10 <sup>-4</sup> mcg
Albumin, Bovine	Stabilizer	Zostavax	Varicella Zoster	Trace amounts
Albumin, Bovine Serum	Stabilizer	Kinrix	DTaP+IPV	VERO cell culture growth
Albumin, Bovine Serum	Stabilizer	MMR-II	MMR	<1 ppm
Albumin, Bovine Serum	Stabilizer	Pediarix	DTaP+HepB+IPV	VERO cell culture growth
Albumin, Bovine Serum	Stabilizer	Pentacel	DTaP+IPV+Hib	≤10 ng
Albumin, Bovine Serum	Stabilizer	Prehevbrio	HepB	<2.5 ng/mL
Albumin, Bovine serum	Stabilizer	Priorix	MMR	≤50 mcg
Albumin, Bovine serum	Stabilizer	ProQuad	MMRV	≤0.5 mcg
Albumin, Bovine Serum	Stabilizer	Quadracel	DTaP+IPV	≤50 ng
Albumin, Bovine Serum	Stabilizer	RotaTaq	Rotavirus	Trace amounts
Albumin, Bovine Serum	Stabilizer	Varivax	Varicella	Trace amounts
Albumin, Bovine Serum	Stabilizer	Vaxelis	DTaP+IPV+Hib+HepB	≤50 ng
Albumin, Egg (Ovalbumin)	Residual Medium	Afluria	Influenza	≤1 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Fluarix	Influenza	≤0.05 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Flulaval	Influenza	≤0.3 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	FluMist	Influenza	≤0.024 mcg/0.2mL dose
Albumin, Egg (Ovalbumin)	Residual Medium	Fluvirin	Influenza	≤1 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Priorix	MMR	≤60 mcg
Albumin, Human	Diluent/Stabilizer	MMR-II	MMR	≤0.3 mg
Albumin, Human	Diluent/Stabilizer	ProQuad	MMRV	≤0.31 mg
Aluminum	Adjuvant	Engerix-B	HepB	0.5 mg/mL aluminum as aluminum hydroxide
Aluminum	Adjuvant	Gardasil	HPV	225 mcg as amorphous aluminum hydroxyphosphate sulfate
Aluminum	Adjuvant	Gardasil 9	HPV	500 mcg as amorphous aluminum hydroxyphosphate sulfate
Aluminum	Adjuvant	Havrix	HepA	0.25 mg (as aluminum hydroxide)
Aluminum	Adjuvant	Pediarix	DTaP+HepB+IPV	≤0.7 mg
Aluminum	Adjuvant	PedvaxHIB	Hib+HepB	225 mcg
Aluminum	Adjuvant	Prevnar 13	Pneumococcal 13	125 mcg
Aluminum	Adjuvant	Prevnar 20	Pneumococcal 20	125 mcg as aluminum phosphate
Aluminum	Adjuvant	Recombivax HB	HepB	0.5 mg/mL
Aluminum	Adjuvant	TDVax	Tetanus+Diphtheria	≤0.53mg
Aluminum	Adjuvant	Tenivac	Tetanus+Diphtheria	0.33 mg
Aluminum	Adjuvant	Trumenba	Meningococcal B	0.25 mg
Aluminum	Adjuvant	Vaqta	HepA	0.45 mg/mL as amorphous aluminum hydroxyphosphate sulfate
Aluminum	Adjuvant	Vaxelis	DTaP+IPV+Hib+HepB	319 mcg aluminum from aluminum salts
Aluminum	Adjuvant	Vaxneuvance	Pneumococcal 15	125 mcg aluminum as aluminum phosphate adjuvant
Aluminum Hydroxide	Adjuvant	Bexsero	Meningococcal B	1.5 mg (0.519 mg aluminum)
Aluminum Hydroxide	Adjuvant	Boostrix	Tdap	≤0.3 mg aluminum
Aluminum Hydroxide	Adjuvant	Infanrix	DTaP	0.5 mg aluminum
Aluminum Hydroxide	Adjuvant	Kinrix	DTaP+IPV	≤0.5 mg aluminum
Aluminum Hydroxide	Adjuvant	Prehevbrio	HepB	0.5 mg/mL aluminum
Aluminum Phosphate	Adjuvant	Adacel	Tdap	1.5 mg (0.33 mg aluminum)
Aluminum Phosphate	Adjuvant	Daptacel	DTaP	1.5 mg (0.33 mg aluminum)
Aluminum Phosphate	Adjuvant	DT	DT	1.5 mg
Aluminum Phosphate	Adjuvant	Penbraya	Meningococcal ACYW-135	0.25 mg aluminum
Aluminum Phosphate	Adjuvant	Pentacel	DTaP+IPV+Hib	1.5 mg (0.33 mg aluminum)
Aluminum Phosphate	Adjuvant	Quadracel	DTaP+IPV	1.5 mg (0.33 mg aluminum)

Excipient	Purpose	Vaccine Name	Vaccine Type	Amount per 0.5 mL Dose (unless otherwise noted)
Aluminum Phosphate and Aluminum Hydroxide	Adjuvant	Twinrix	HepA+HepB	0.45 mg/mL aluminum
Amino Acid	Medium Nutrient	Flublok	Influenza	Ingredient in growth medium
Amino Acid	Medium Nutrient	Gardasil	HPV	Ingredient in growth medium
Amino Acid	Medium Nutrient	Gardasil 9	HPV	Amount not specified in package insert
Amino Acid	Medium Nutrient	Havrix	HepA	Amino acid supplement - 0.3% w/v
Amino Acid	Medium Nutrient	Menveo	Meningococcal ACYW-135	Amount not specified in package insert
Amino Acid	Medium Nutrient	PedvaxHIB	Hib+HepB	Amount not specified in package insert
Amino Acid	Medium Nutrient	Prehevbrio	HepB	Amount not specified in package insert
Amino Acid	Medium Nutrient	Priorix	MMR	9 mg
Amino Acid	Medium Nutrient	Recombivax HB	HepB	In fermentation medium
Amino Acid	Medium Nutrient	Recombivax HB	HepB	Amount not specified in package insert
Amino Acid	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in package insert
Amino Acid	Medium Nutrient	Shingrix	Zoster	Ingredient in growth medium
Amino Acid	Medium Nutrient	Twinrix	HepA+HepB	Amount not specified in package insert
Amino Acid	Medium Nutrient	Vaxelis	DTaP+IPV+Hib+HepB	Amount not specified in package insert
Ammonium Sulfate	Protein Purifier	ActHIB	Hib	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Adacel	Tdap	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Daptacel	DTaP	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Menactra	Meningococcal ACYW-135	Ingredient in purification
Ammonium Sulfate	Protein Purifier	MenQuadfi	Meningococcal ACWY	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Pentacel	DTaP+IPV+Hib	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Prevnar 13	Pneumococcal 13	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Quadracel	DTaP+IPV	Ingredient in purification
Ammonium Sulfate	Protein Purifier	TDVax	Tetanus+Diphtheria	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Tenivac	Tetanus+Diphtheria	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Vaxelis	DTaP+IPV+Hib+HepB	Ingredient in purification
Ammonium Thiocyanate	Manufacturing residue	Vaxelis	DTaP+IPV+Hib+HepB	≤0.125 mcg
Amorphous Aluminum Hydroxyphosphate Sulfate (AAHS)	Adjuvant	Vaxelis	DTaP+IPV+Hib+HepB	Amount not specified in package insert
Arginine		FluMist	Influenza	2.42 mg/0.2mL dose
AS01B	Adjuvant	Shingrix	Zoster	Amount not specified in package insert
AS01e	Adjuvant	AREXVY	RSV	Amount not specified in package insert
Baculovirus proteins	Residual Byproduct	Novavax	COVID-19	residual amounts
Beta-Propiolactone	Viral Inactivator	Afluria	Influenza	<2.3 ng
Beta-Propiolactone	Viral Inactivator	Flucelvax	Influenza	<0.5 mcg
Beta-Propiolactone	Viral Inactivator	Fluvirin	Influenza	≤0.5 mcg
Bovine Casein	Medium Nutrient	ActHIB	Hib	Amount not specified in package insert
Bovine Casein	Medium Nutrient	Boostrix	Tdap	Amount not specified in package insert
Bovine Casein	Medium Nutrient	DT	DT	Amount not specified in package insert
Bovine Casein	Medium Nutrient	Infanrix	DTaP	Amount not specified in package insert
Bovine Casein	Medium Nutrient	Kinrix	DTaP+IPV	Amount not specified in package insert
Bovine Casein	Medium Nutrient	Menactra	Meningococcal ACYW-135	Amount not specified in package insert
Bovine Casein	Medium Nutrient	Pediarix	DTaP+HepB+IPV	Amount not specified in package insert
Bovine Extract	Medium Nutrient	Boostrix	Tdap	Amount not specified in package insert
Bovine Extract	Stabilizer	Infanrix	DTaP	Amount not specified in package insert
Bovine Extract	Stabilizer	Kinrix	DTaP+IPV	Amount not specified in package insert
Bovine Extract	Stabilizer	Pediarix	DTaP+HepB+IPV	Amount not specified in package insert
Bovine Extract	Stabilizer	TDVax	Tetanus+Diphtheria	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Adacel	Tdap	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Daptacel	DTaP	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Menactra	Meningococcal ACYW-135	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Pentacel	DTaP+IPV+Hib	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Prevnar 13	Pneumococcal 13	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Prevnar 20	Pneumococcal 20	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Quadracel	DTaP+IPV	Amount not specified in package insert
Bovine, Casamino Acid	Stabilizer	Tenivac	Tetanus+Diphtheria	Amount not specified in package insert
Calcium Carbonate	Buffer	Rotarix	Rotavirus	Ingredient in diluent - Amount not specified in package insert
Calcium Chloride	Medium Nutrient	Afluria	Influenza	0.5 mcg
Calcium Chloride	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in package insert
Carbohydrates	Medium Nutrient	Gardasil	HPV	Amount not specified in package insert
Carbohydrates	Medium Nutrient	Gardasil 9	HPV	Amount not specified in package insert
Cellular DNA	Residual Byproduct	Novavax	COVID-19	≤ 0.00016 mcg

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Cetyltrimethylammonium Bromide (CTAB)	Protein Purifier	Fluad	Influenza	≤12 mcg
Cetyltrimethylammonium Bromide (CTAB)	Protein Purifier	Flucelvax	Influenza	≤13.5mcg
Chick Embryo	Residual Medium	MMR-II	MMR	No intact cells (may have trace residual protein)
Chick Embryo	Residual Medium	Priorix	MMR	Amount not specified in package insert
Chick Embryo	Residual Medium	ProQuad	MMRV	No intact cells (may have trace residual protein)
CHO cell proteins	Residual Medium	Prehevbrio	HepB	≤2.5 ng/mL
Cholesterol	Lipid	AREXVY	RSV	0.125 mg
Cholesterol	Lipid	Comirnaty (Pfizer)	COVID-19	0.19 mg/0.3 mL dose
Cholesterol	Lipid	mResvia	RSV	<1.02 mg
Cholesterol	Lipid	Novavax	COVID-19	Amount not specified in package insert
Cholesterol	Lipid	Shingrix	Zoster	0.25 mg
Cholesterol	Lipid	Spikevax (Moderna)	COVID-19	Amount not specified in package insert
Citric Acid Monohydrate	Buffer	Fluad	Influenza	0.04 mg at pH 6.9-7.7
CpG 1018	Adjuvant	HepIsav-B	HepB	3000 mcg
Deoxycholate	Emulsifier	HepIsav-B	HepB	<0.9 ppm
Dextran	Stabilizer	Rotarix	Rotavirus	Amount not specified in package insert
Dextrose	Medium Nutrient	Capvaxive	Pneumococcal 21	Amount not specified in package insert
Dextrose	Medium Nutrient	DT	DT	Amount not specified in package insert
Dextrose	Medium Nutrient	Penbraya	Meningococcal ACYW-135	Amount not specified in package insert
Dextrose	Medium Nutrient	Recombivax HB	HepB	Ingredient in fermentation medium
Dextrose	Medium Nutrient	Vaxneuvance	Pneumococcal 15	Amount not specified in package insert
D-glucose	Medium Nutrient	Rotarix	Rotavirus	In DMEM (Dulbecco's Modified Eagle Medium)
Dimethyl-beta-cyclodextrin	Medium Nutrient	Adacel	Tdap	Amount not specified in package insert
Dimethyl-beta-cyclodextrin	Medium Nutrient	Daptacel	DTaP	Amount not specified in package insert
Dimethyl-beta-cyclodextrin	Medium Nutrient	Pentacel	DTaP+IPV+Hib	Ingredient in Stainer-Scholte medium
DNA	Residual Medium	AREXVY	RSV	≤0.80 ng/mg
DNA	Residual Medium	Flublok	Influenza	≤10 ng
DNA	Residual Medium	Flucelvax	Influenza	≤10 ng MDCK cell DNA ≤21.6 mcg MDCK cell protein
DNA	Residual Medium	ProQuad	MMRV	Residual component of MRC-5 cells
DNA	Residual Medium	RotaTeq	Rotavirus	Residual component of manufacturing process
DNA	Residual Medium	Shingrix	Zoster	≤2.1 pg
DNA	Residual Medium	Vaqta	HepA	<4 x 10 <sup>-6</sup> mcg
DNA	Residual Medium	Varivax	Varicella	Residual component of MRC-5 cells
DNA	Residual Medium	Zostavax	Varicella Zoster	Residual
DNA, CHO cell	Residual Medium	Prehevbrio	HepB	≤10 pg/mL
DOPC	Lipid in AS01 <sub>E</sub>	AREXVY	RSV	0.5 mg
DOPC	Lipid in AS01	Shingrix	Zoster	1 mg
Egg Protein (ovalbumin)	Residual Medium	Fluad	Influenza	<0.4 mcg
Ethylenediaminetetraacetic acid (EDTA)	Preservative	FluMist	Influenza	<2.3 mcg/0.2mL dose
Ethylenediaminetetraacetic acid (EDTA)	Preservative	Varivax	Varicella	Trace amounts
Ferric (III) Nitrate	Medium Nutrient	Rotarix	Rotavirus	In DMEM (Dulbecco's Modified Eagle Medium)
Formaldehyde	Inactivating Agent	ActHIB	Hib	<0.5 mcg
Formaldehyde	Inactivating Agent	Adacel	Tdap	≤5 mcg
Formaldehyde	Inactivating Agent	Boostrix	Tdap	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	Daptacel	DTaP	≤5 mcg (residual)
Formaldehyde	Inactivating Agent	DT	DT	<100 mcg
Formaldehyde	Inactivating Agent	Fluad	Influenza	≤10 mcg
Formaldehyde	Inactivating Agent	Fluarix	Influenza	≤5 mcg
Formaldehyde	Inactivating Agent	Flulaval	Influenza	≤25 mcg
Formaldehyde	Inactivating Agent	FluZone	Influenza	≤100 mcg
Formaldehyde	Inactivating Agent	FluZone High-Dose	Influenza	≤100 mcg
Formaldehyde	Inactivating Agent	Havrix	HepA	≤0.1 mg /mL formalin
Formaldehyde	Inactivating Agent	Hiberix	Hib	<0.5 mcg (residual)
Formaldehyde	Inactivating Agent	Infanrix	DTaP	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	Kinrix	DTaP+IPV	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	Menactra	Meningococcal ACYW-135	<2.66 mcg
Formaldehyde	Inactivating Agent	MenQuadfi	Meningococcal ACWY	<3 mcg/mL
Formaldehyde	Inactivating Agent	Menveo	Meningococcal ACYW-135	≤0.30 mcg
Formaldehyde	Inactivating Agent	Pediarix	DTaP+HepB+IPV	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	Pentacel	DTaP+IPV+Hib	2-7 mcg (residual)

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Formaldehyde	Inactivating Agent	Prehevbrio	HepB	≤500 ng/mL
Formaldehyde	Inactivating Agent	Quadracel	DTaP+IPV	≤5 mcg
Formaldehyde	Inactivating Agent	Recombivax HB	HepB	<15 mcg/mL (residual)
Formaldehyde	Inactivating Agent	TDVax	Tetanus+Diphtheria	<100 mcg
Formaldehyde	Inactivating Agent	Tenivac	Tetanus+Diphtheria	≤5.0 mcg
Formaldehyde	Inactivating Agent	Twinrix	HepA+HepB	≤0.1 mg/mL formalin
Formaldehyde	Inactivating Agent	Vaqta	HepA	<0.8 mcg
Formaldehyde	Inactivating Agent	Vaxelis	DTaP+IPV+Hib+HepB	≤14 mcg
Gelatin, hydrolyzed	Stabilizer	MMR-II	MMR	14.5 mg
Gelatin, hydrolyzed	Stabilizer	ProQuad	MMRV	11 mg
Gelatin, hydrolyzed	Stabilizer	Varivax	Varicella	12.5 mg
Gelatin, Porcine, Hydrolyzed	Stabilizer	FluMist	Influenza	2.00 mg/0.2 mL dose
Gelatin, Porcine, Hydrolyzed	Stabilizer	Zostavax	Varicella Zoster	15.58 mg/0.65 mL dose
Gentamicin Sulfate	Antimicrobial	Fluarix	Influenza	≤0.15 mcg
Gentamicin Sulfate	Antimicrobial	FluMist	Influenza	<0.015 mcg/mL
Glutaraldehyde	Inactivating Agent	Adacel	Tdap	<50 ng (residual)
Glutaraldehyde	Inactivating Agent	Boostrix	Tdap	Amount not specified in package insert
Glutaraldehyde	Inactivating Agent	Daptacel	DTaP	<50 ng (residual)
Glutaraldehyde	Inactivating Agent	Infanrix	DTaP	Amount not specified in package insert
Glutaraldehyde	Inactivating Agent	Kinrix	DTaP+IPV	Amount not specified in package insert
Glutaraldehyde	Inactivating Agent	Pediarix	DTaP+HepB+IPV	Amount not specified in package insert
Glutaraldehyde	Inactivating Agent	Pentacel	DTaP+IPV+Hib	<50 ng (residual)
Glutaraldehyde	Inactivating Agent	Quadracel	DTaP+IPV	<50 ng
Glutaraldehyde	Inactivating Agent	Vaxelis	DTaP+IPV+Hib+HepB	50 ng
Histidine	Medium Nutrient	Bexsero	Meningococcal B	0.776 mg
Histidine	Medium Nutrient	Trumenba	Meningococcal B	10 mM
Host cell Proteins	Residual medium	AREXVY	RSV	≤2.0%
Host cell Proteins	Residual Medium	Shingrix	Zoster	≤3.0%
Hydrocortisone	Medium Nutrient	Afluria	Influenza	≤0.56 ng
Hydrocortisone	Medium Nutrient	Fluad	Influenza	≤0.005 ng
Hydrocortisone	Medium Nutrient	Fluarix	Influenza	≤0.0015 mcg
Kanamycin	Antimicrobial	Bexsero	Meningococcal B	<0.01 mcg
Kanamycin	Antimicrobial	Fluad	Influenza	≤0.03 mcg
Lactalbumin Hydrolysate	Medium Nutrient	Kinrix	DTaP+IPV	Ingredient in growth medium
Lactalbumin Hydrolysate	Medium Nutrient	Pediarix	DTaP+HepB+IPV	Ingredient in growth medium
Lactose	Stabilizer	Hiberix	Hib	12.6 mg
Lactose	Stabilizer	Priorix	MMR	32 mg anhydrous lactose
L-cystine	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in package insert
Lentil Lectin	Residual Byproduct	Novavax	COVID-19	< 0.025 mcg
L-histidine	Medium Nutrient	Capvaxive	Pneumococcal 21	1.55 mg
L-histidine	Medium Nutrient	Gardasil	HPV	0.78 mg
L-histidine	Medium Nutrient	Gardasil 9	HPV	0.78 mg
L-histidine	Medium Nutrient	Penbraya	Meningococcal ACYW-135	0.78 mg
L-histidine	Medium Nutrient	Vaxneuvance	Pneumococcal 15	1.55 mg
L-tyrosine	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in package insert
Magnesium Sulfate	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in package insert
Mannitol	Stabilizer	Abrysvo	RSV	22.5 mg
Mannitol	Stabilizer	Priorix	MMR	8 mg
Matrix-M (Fraction A and Fraction C of saponin extracts)	Adjuvant	Novovax	COVID-19	50 mcg
Methyl-A-D-Mannopyranoside	Residual Byproduct	Novavax	COVID-19	2 mcg
MF59	Adjuvant	Fluad	Influenza	Amount not specified in package insert
Monosodium glutamate	Stabilizer	FluMist	Influenza	0.188 mg/0.2 mL dose
Monosodium L-glutamate	Stabilizer	ProQuad	MMRV	0.40 mg
Monosodium L-glutamate	Stabilizer	Varivax	Varicella	0.5 mg
Monosodium L-glutamate	Stabilizer	Zostavax	Varicella Zoster	0.62 mg/0.65 mL dose
MRC-5	Manufacturing Residue	Havrix	HepA	≤5 mcg/mL
MRC-5	Manufacturing Residue	Priorix	MMR	Amount not specified in package insert
MRC-5	Manufacturing Residue	ProQuad	MMRV	Residual
MRC-5	Manufacturing Residue	Quadracel	DTaP+IPV	Ingredient in growth medium
MRC-5	Manufacturing Residue	Twinrix	HepA+HepB	≤2.5 mcg/mL
MRC-5	Manufacturing Residue	Vaqta	HepA	Amount not specified in package insert
MRC-5	Manufacturing Residue	Varivax	Varicella	Residual component
MRC-5	Manufacturing Residue	Zostavax	Varicella Zoster	Residual
Neomycin	Antimicrobial	Fluad	Influenza	≤0.02 mcg
Neomycin	Antimicrobial	Fluvirin	Influenza	≤2.5 mcg
Neomycin	Antimicrobial	Kinrix	DTaP+IPV	≤0.05 ng
Neomycin	Antimicrobial	MMR-II	MMR	25 mcg
Neomycin	Antimicrobial	Pediarix	DTaP+HepB+IPV	≤0.05 ng

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Neomycin	Antimicrobial	Pentacel	DTaP+IPV+Hib	<0.01 pg
Neomycin	Antimicrobial	ProQuad	MMRV	<16 mcg
Neomycin	Antimicrobial	Quadracel	DTaP+IPV	<4 pg
Neomycin	Antimicrobial	Vaqta	HepA	<10 ppb (residual)
Neomycin	Antimicrobial	Varivax	Varicella	Trace amounts
Neomycin	Antimicrobial	Vaxelis	DTaP+IPV+Hib+HepB	<5 ng
Neomycin	Antimicrobial	Zostavax	Varicella Zoster	Trace amounts
Neomycin Sulfate	Antimicrobial	Afluria	Influenza	≤61.5 ng
Neomycin Sulfate	Antimicrobial	Havrix	HepA	≤40 ng/mL
Neomycin Sulfate	Antimicrobial	Priorix	MMR	≤25 mcg
Neomycin Sulfate	Antimicrobial	Twinrix	HepA+HepB	≤20 ng/mL
Nonylphenol Ethoxylate	Surfactant	Fluvirin	Influenza	≤0.015% w/v
Octoxynol-10 (Triton X-100)	Surfactant	Fluarix	Influenza	≤0.085 mg
Octoxynol-10 (Triton X-100)	Surfactant	Flublok	Influenza	≤100 mcg
Octylphenol Ethoxylate (Triton X-100)	Surfactant	FluZone	Influenza	≤150 mcg
Octylphenol Ethoxylate (Triton X-100)	Surfactant	FluZone High-Dose	Influenza	≤250 mcg
Peptone, Soy	Medium Nutrient	Prevnar 13	Pneumococcal 13	Ingredient in growth medium
Peptone, Soy	Medium Nutrient	Prevnar 20	Pneumococcal 20	Ingredient in growth medium
Peptone, Soy	Medium Nutrient	Recombivax HB	HepB	Ingredient in fermentation medium
Peptone, Soy	Medium Nutrient	Vaxneuvance	Pneumococcal 15	Amount not specified in package insert
Phenol	Inactivating agent	Capvaxive	Pneumococcal 21	Ingredient in purification
Phenol	Preservative	PedvaxHIB	Hib+HepB	Ingredient in purification
Phenol	Preservative	Pneumovax 23	Pneumococcal 23	Saline containing 0.25% phenol
Phosphate Buffer	Buffer	Afluria	Influenza	20 mcg monobasic potassium phosphate 80 mcg monobasic sodium phosphate 300 mcg dibasic sodium phosphate
Phosphate Buffer	Buffer	AREXVY	RSV	4.4 mg sodium chloride 0.83 mg potassium dihydrogen phosphate 0.26 mg dipotassium phosphate 0.15 mg of disodium phosphate anhydrous
Phosphate Buffer	Buffer	Engerix-B	HepB	0.9 mg/mL Disodium phosphate dihydrate 0.7 mg/mL Sodium dihydrogen phosphate dihydrate
Phosphate Buffer	Buffer	Flublok	Influenza	0.2 mcg monobasic sodium phosphate 0.5 mg dibasic sodium phosphate
Phosphate Buffer	Buffer	FluMist	Influenza	0.96 mg/0.2 mL dose monobasic potassium phosphate 2.26 mg/0.2mL dose dibasic potassium phosphate
Phosphate Buffer	Buffer	FluZone	Influenza	Sodium phosphate-buffered isotonic sodium chloride solution - "quantity sufficient to appropriate volume"
Phosphate Buffer	Buffer	FluZone High-Dose	Influenza	Sodium phosphate-buffered isotonic sodium chloride solution - "quantity sufficient to appropriate volume"
Phosphate Buffer	Buffer	Heplisav-B	HepB	9.0 mg/mL sodium chloride 1.75 mg/mL sodium phosphate, dibasic dodecahydrate 0.48 mg/mL sodium phosphate, monobasic dihydrate
Phosphate Buffer	Buffer	Menactra	Meningococcal ACYW-135	Sodium phosphate buffered isotonic sodium chloride solution; amount not specified
Phosphate Buffer	Buffer	MenQuadfi	Meningococcal ACWY	1.23mg sodium acetate
Phosphate Buffer	Buffer	Novavax	COVID-19	14.7 mcg Disodium Hydrogen Phosphate Dihydrate 2.465 mg Disodium Hydrogen Phosphate Heptahydrate 3.85 mcg Potassium Dihydrogen Phosphate 0.445 mg Sodium Dihydrogen Phosphate Monohydrate
Phosphate Buffer	Buffer	Prehevbrio	HepB	0.38 mg/dose disodium hydrogen phosphate dodecahydrate 0.02 mg/dose potassium dihydrogen phosphate anhydrous
Phosphate Buffer	Buffer	ProQuad	MMRV	36 mcg potassium phosphate dibasic 72 mcg potassium phosphate monobasic 0.34 mg sodium phosphate dibasic
Phosphate Buffer	Buffer	Rotarix	Rotavirus	Sodium phosphate in DMEM (medium)
Phosphate Buffer	Buffer	RotaTeq	Rotavirus	Sodium phosphate monobasic monohydrate
Phosphate Buffer	Buffer	Shingrix	Zoster	0.54 mg potassium dihydrogen phosphate 0.160 mg sodium dihydrogen phosphate dihydrate 0.15 mg disodium phosphate anhydrous 0.116 mg dipotassium phosphate
Phosphate Buffer	Buffer	Spikevax (Moderna)	COVID-19	0.10 mg sodium acetate



Excipient	Purpose	Vaccine Name	Vaccine Type	Amount per 0.5 mL Dose (unless otherwise noted)
Phosphate Buffer	Buffer	Twinrix	HepA+HepB	Amount not specified in package insert
Phosphate Buffer	Buffer	Varivax	Varicella	0.08 mg potassium phosphate monobasic 0.45 mg sodium phosphate dibasic Sodium phosphate monobasic, trace amounts
Phosphate Buffer	Buffer	Zostavax	Varicella Zoster	0.10 mg/0.65 mL dose potassium phosphate monobasic 0.57 mg/0.65 mL dose sodium phosphate monobasic
Phosphatidylcholine	Stabilizer	Novavax	COVID-19	Amount not specified in package insert
Pluronic F-68	Residual Byproduct	Novavax	COVID-19	< 2.19 mcg
Polyethylene Glycol	Lipid	Comirnaty (Pfizer)	COVID-19	0.05 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide/0.3 mL dose
Polyethylene Glycol	Lipid	Spikevax (Moderna)	COVID-19	1.01 mg (SM-102, polyethylene glycol [PEG] 2000 dimyristoyl glycerol [DMG])
Polyethylene Glycol 2000 dimyristoyl glycerol [PEG2000-DMG]	Lipids	mResvia	RSV	<1.02 mg
Polymyxin	Antimicrobial	Fluvirin	Influenza	≤3.75 mcg
Polymyxin B	Antimicrobial	Afluria	Influenza	≤10.5 ng
Polymyxin B	Antimicrobial	Kinrix	DTaP+IPV	≤0.01 ng
Polymyxin B	Antimicrobial	Pediarix	DTaP+HepB+IPV	≤0.01 ng
Polymyxin B	Antimicrobial	Pentacel	DTaP+IPV+Hib	<0.000001 pg
Polymyxin B Sulfate	Antimicrobial	Quadracel	DTaP+IPV	<4 pg
Polymyxin B Sulfate	Antimicrobial	Vaxelis	DTaP+IPV+Hib+HepB	<25 ng
Polysorbate 20	Surfactant	Capvaxive	Pneumococcal 21	0.50 mg
Polysorbate 20	Surfactant	Flublok	Influenza	≤27.5 mcg (Tween 20)
Polysorbate 20	Surfactant	Havrix	HepA	0.05 mg/mL
Polysorbate 20	Surfactant	Twinrix	HepA+HepB	Amount not specified in package insert
Polysorbate 20	Surfactant	Vaxneuvance	Pneumococcal 15	1 mg
Polysorbate 80	Surfactant	Abrysvo	RSV	0.08 mg
Polysorbate 80	Surfactant	AREXVY	RSV	0.18 mg
Polysorbate 80	Surfactant	Boostrix	Tdap	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	Fluad	Influenza	1.175 mg
Polysorbate 80	Surfactant	Flulaval	Influenza	≤665 mcg
Polysorbate 80	Surfactant	Gardasil	HPV	50 mcg
Polysorbate 80	Surfactant	Gardasil 9	HPV	50 mcg
Polysorbate 80	Surfactant	Hepilisav-B	HepB	0.1 mg/mL
Polysorbate 80	Surfactant	Infanrix	DTaP	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	Kinrix	DTaP+IPV	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	Novavax	COVID-19	0.050 mg
Polysorbate 80	Surfactant	Pediarix	DTaP+HepB+IPV	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	Penbraya	Meningococcal ACYW-135	0.018 mg at pH 6.0
Polysorbate 80	Surfactant	Pentacel	DTaP+IPV+Hib	<8.1 mcg
Polysorbate 80	Surfactant	Prevnar 13	Pneumococcal 13	100 mcg
Polysorbate 80	Surfactant	Prevnar 20	Pneumococcal 20	100 mcg
Polysorbate 80	Surfactant	Quadracel	DTaP+IPV	10 ppm
Polysorbate 80	Surfactant	RotaTeq	Rotavirus	Amount not specified in package insert
Polysorbate 80	Surfactant	Shingrix	Zoster	0.08 mg
Polysorbate 80	Surfactant	Trumenba	Meningococcal B	0.018 mg
Polysorbate 80	Surfactant	Vaxelis	DTaP+IPV+Hib+HepB	<0.0056%
Polysorbate 80 (Tween 80)	Surfactant	Fluarix	Influenza	≤0.415 mg (Tween 80)
Polysorbate 80 (Tween 80)	Surfactant	Flucelvax	Influenza	≤1125 mcg (Tween 80)
Porcine DNA	Residual Medium	Rotarix	Rotavirus	PCV-1
Potassium Aluminum Sulfate	Adjuvant	Recombivax HB	HepB	Amount not specified in package insert
Potassium Chloride	Buffer	Afluria	Influenza	20 mcg
Potassium Chloride	Buffer	Novavax	COVID-19	2.25 mcg
Potassium Chloride	Buffer	Prehevbrio	HepB	0.02 mg/mL
Potassium Chloride	Buffer	ProQuad	MMRV	60 mcg
Potassium Chloride	Medium Nutrient	Rotarix	Rotavirus	Ingredient in DMEM medium
Potassium Chloride	Buffer	Varivax	Varicella	0.08 mg
Potassium Chloride	Buffer	Zostavax	Varicella Zoster	0.10 mg/0.65 mL dose
Protein	Residual Medium	Flucelvax	Influenza	≤ 225 mcg
Salts, Inorganic	Medium Nutrient	DT	DT	Sodium chloride – Amount not specified in package insert
Salts, Inorganic	Medium Nutrient	Twinrix	HepA+HepB	Sodium chloride – Amount not specified in package insert
Salts, Mineral	Adjust tonicity	Abrysvo	RSV	1.1 mg sodium chloride
Salts, Mineral	Adjust tonicity	ActHIB	Hib	0.4% sodium chloride in diluent
Salts, Mineral	Adjust tonicity	Afluria	Influenza	4.1 mg sodium chloride
Salts, Mineral	Adjust tonicity	AREXVY	RSV	4.4 mg sodium chloride

Excipient	Purpose	Vaccine Name	Vaccine Type	Amount per 0.5 mL Dose (unless otherwise noted)
Salts, Mineral	Adjust tonicity	Bexsero	Meningococcal B	3.125 mg sodium chloride
Salts, Mineral	Adjust tonicity	Boostrix	Tdap	4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	Capvaxive	Pneumococcal 21	4.49 mg sodium chloride
Salts, Mineral	Adjust tonicity	Engerix-B	HepB	8 mg/mL sodium chloride
Salts, Mineral	Adjust tonicity	Flublok	Influenza	4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	Gardasil	HPV	9.56 mg sodium chloride
Salts, Mineral	Adjust tonicity	Gardasil 9	HPV	9.56 mg sodium chloride
Salts, Mineral	Adjust tonicity	Hiberix	Hib	0.9% sodium chloride in diluent
Salts, Mineral	Adjust tonicity	Infanrix	DTaP	4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	Kinrix	DTaP+IPV	≤4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	MenQuadfi	Meningococcal ACWY	3.35 mg sodium chloride
Salts, Mineral	Adjust tonicity	Novavax	COVID-19	8.766 mg sodium chloride
Salts, Mineral	Adjust tonicity	Pediarix	DTaP+HepB+IPV	4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	PedvaxHIB	Hib+HepB	0.9% sodium chloride
Salts, Mineral	Adjust tonicity	Penbraya	Meningococcal ACYW-135	4.65 mg sodium chloride
Salts, Mineral	Adjust tonicity	Pneumovax 23	Pneumococcal 23	Ingredient in isotonic saline solution
Salts, Mineral	Adjust tonicity	Prehevbrio	HepB	8.45 mg/mL sodium chloride
Salts, Mineral	Adjust tonicity	Prevnar 20	Pneumococcal 20	4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	ProQuad	MMRV	2.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	Recombivax HB	HepB	Ingredient in fermentation medium
Salts, Mineral	Adjust tonicity	Rotarix	Rotavirus	In DMEM (Dulbecco's Modified Eagle Medium)
Salts, Mineral	Adjust tonicity	Shingrix	Zoster	4.385 mg sodium chloride
Salts, Mineral	Adjust tonicity	Tenivac	Tetanus+Diphtheria	Sodium chloride – Amount not specified in package insert
Salts, Mineral	Adjust tonicity	Twinrix	HepA+HepB	Aluminum salts – Amount not specified in package insert
Salts, Mineral	Adjust tonicity	Vaqta	HepA	0.9% sodium chloride
Salts, Mineral	Adjust tonicity	Varivax	Varicella	3.2 mg Sodium Chloride
Salts, Mineral	Adjust tonicity	Vaxneuvance	Pneumococcal 15	4.50 mg sodium chloride
Salts, Mineral	Adjust tonicity	Zostavax	Varicella Zoster	3.99 mg/0.65 mL dose sodium chloride
Sf9 Cell Proteins	Residual byproduct	Novavax	COVID-19	≤ 0.96 mcg
Simethicone	Residual Byproduct	Novavax	COVID-19	< 0.92 mcg
SM-102 (heptadecan-9-yl 8-((2-hydroxyethyl) (6-oxo-6-(undecyloxy) hexyl) amino) octanoate	Lipids	mResvia	RSV	<1.02 mg
Sodium Acetate Tryhydrate	Stabilizer	mResvia	RSV	0.10 mg
Sodium Bicarbonate	Buffer	ProQuad	MMRV	0.17 mg
Sodium Borate	Buffer	Gardasil	HPV	35 mcg
Sodium Borate	Buffer	Gardasil 9	HPV	35 mcg
Sodium Borate	Stabilizer	Vaqta	HepA	70 mcg/mL
Sodium Citrate	Adjust pH	RotaTeq	Rotavirus	Amount not specified in package insert
Sodium Citrate Dihydrate	Buffer	Fluad	Influenza	0.66 mg
Sodium Deoxycholate	Surfactant	Fluarix	Influenza	≤50 mcg
Sodium Deoxycholate	Surfactant	Flulaval	Influenza	≤50 mcg
Sodium Hydroxide	Adjust pH	RotaTeq	Rotavirus	Amount not specified in package insert
Sodium Hydroxide or Hydrochloric Acid	Adjust pH	Novavax	COVID-19	Amount not specified in package insert
Sodium Pyruvate	Medium Nutrient	Rotarix	Rotavirus	in DMEM (medium)
Sodium Taurodeoxycholate	Protein Purifier	Afluria	Influenza	≤10 ppm (residual)
Sorbitan Trioleate	Stabilizer	Fluad	Influenza	1.175 mg
Sorbitol	Stabilizer, solvent	MMR-II	MMR	14.5 mg
Sorbitol	Stabilizer, solvent	ProQuad	MMRV	1.8 mg
Sorbitol	Stabilizer, solvent	Rotarix	Rotavirus	Amount not specified in package insert
Squalene	Adjuvant	Fluad	Influenza	9.75 mg
Streptomycin sulfate	Manufacturing Residue	Vaxelis	DTaP+IPV+Hib+HepB	<200 ng
Succinate Buffer	Stabilizer	Prenar 13	Pneumococcal 13	295 mcg
Succinate Buffer	Stabilizer	Prenar 20	Pneumococcal 20	294 mcg
Sucrose	Stabilizer	Abrysvo	RSV	11.3 mg
Sucrose	Stabilizer	ActHIB	Hib	8.5%
Sucrose	Stabilizer	Afluria	Influenza	<10 mcg
Sucrose	Stabilizer	Bexsero	Meningococcal B	10 mg
Sucrose	Stabilizer	Comirnaty (Pfizer)	COVID-19	31 ng/0.3 mL dose
Sucrose	Stabilizer	FluMist	Influenza	13.68 mg/0.2 mL dose
Sucrose	Stabilizer	MMR-II	MMR	1.9 mg
Sucrose	Stabilizer	mResvia	RSV	44 mg
Sucrose	Stabilizer	Penbraya	Meningococcal ACYW-135	28 mg
Sucrose	Stabilizer	Pentacel	DTaP+IPV+Hib	42.5 mg

Excipient	Purpose	Vaccine Name	Vaccine Type	Amount per 0.5 mL Dose (unless otherwise noted)
Sucrose	Stabilizer	ProQuad	MMRV	21 mg
Sucrose	Stabilizer	Rotarix	Rotavirus	Amount not specified in package insert
Sucrose	Stabilizer	RotaTeq	Rotavirus	Amount not specified in package insert
Sucrose	Stabilizer	Shingrix	Zoster	20 mg
Sucrose	Stabilizer	Spikevax (Moderna)	COVID-19	43.5 mg
Sucrose	Stabilizer	Varivax	Varicella	25 mg
Sucrose	Stabilizer	Zostavax	Varicella Zoster	31.16 mg/0.65 mL dose
Tergitol (NP9)	Surfactant	Novavax	COVID-19	< 0.05 mcg
Thimerosal	Preservative	Afluria	Influenza	24.5 mcg mercury only in multi-dose vial; none in single dose
Thimerosal	Preservative	Flucelvax	Influenza	<25 mcg mercury only in multi-dose vial; none in single dose
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
Thimerosal	Manufacturing Residue	TDVax	Tetanus+Diphtheria	≤0.3 mcg mercury (trace amounts)
Trehalose	Stabilizer	AREXVY	RSV	14.7 mg
Triton X-100	Surfactant	Novavax	COVID-19	< 0.025 mcg
Trometamol	Stabilizer	Penbraya	Meningococcal ACYW-135	0.097 mg
Tromethamine	Stabilizer	Abrysvo	RSV	0.11 mg
Tromethamine	Stabilizer	Comirnaty (Pfizer)	COVID-19	0.06 mg/0.3 mL dose
Tromethamine	Stabilizer	mResvia	RSV	0.25 mg
Tromethamine	Stabilizer	Spikevax (Moderna)	COVID-19	0.31 mg
Tromethamine Hydrochloride	Stabilizer	Abrysvo	RSV	1.04 mg
Tromethamine Hydrochloride	Stabilizer	Comirnaty (Pfizer)	COVID-19	0.4 mg/0.3 mL dose
Tromethamine Hydrochloride	Stabilizer	mResvia	RSV	1.2 mg
Tromethamine Hydrochloride	Stabilizer	Spikevax (Moderna)	COVID-19	1.2 mg
Vero Cells	Growth Medium	Kinrix	DTaP+IPV	Amount not specified in package insert
Vero Cells	Growth Medium	Pediarix	DTaP+HepB+IPV	Amount not specified in package insert
Vero cells	Growth Medium	Pentacel	DTaP+IPV+Hib	Amount not specified in package insert
Vero Cells	Growth Medium	Rotarix	Rotavirus	Amount not specified in package insert
Vero Cells	Growth Medium	RotaTeq	Rotavirus	Amount not specified in package insert
Vitamins	Medium Nutrient	DT	DT	Ingredient in growth medium
Vitamins	Protein Purifier	Fluarix	Influenza	≤0.1 mg α-tocopheryl hydrogen succinate
Vitamins	Protein Purifier	Flublok	Influenza	Ingredient in growth medium
Vitamins	Protein Purifier	Flulaval	Influenza	≤240 mcg α-tocopheryl hydrogen succinate
Vitamins	Medium Nutrient	Gardasil	HPV	Amount not specified in package insert
Vitamins	Medium Nutrient	Gardasil 9	HPV	Amount not specified in package insert
Vitamins	Medium Nutrient	HepB	HepB	Amount not specified in package insert
Vitamins	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in package insert
Xanthan	Thickening agent	Rotarix	Rotavirus	Ingredient in diluent
Yeast	Medium Nutrient	Capvaxive	Pneumococcal 21	Amount not specified in package insert
Yeast	Medium Nutrient	Engerix-B	HepB	≤5% yeast protein
Yeast	Medium Nutrient	Gardasil	HPV	<7 mcg yeast protein
Yeast	Medium Nutrient	Gardasil 9	HPV	<7 mcg yeast protein
Yeast	Medium Nutrient	HepB	HepB	Yeast protein: ≤5.0% of total protein (residual) Yeast DNA: <20 pg
Yeast	Medium Nutrient	Menveo	Meningococcal ACYW-135	Amount not specified in package insert
Yeast	Medium Nutrient	Pediarix	DTaP+HepB+IPV	≤5% yeast protein
Yeast	Medium Nutrient	Penbraya	Meningococcal ACYW-135	Amount not specified in package insert
Yeast	Medium Nutrient	Prevnar 13	Pneumococcal 13	Ingredient in growth medium
Yeast	Medium Nutrient	Prevnar 20	Pneumococcal 20	Ingredient in growth medium
Yeast	Medium Nutrient	Recombivax HB	HepB	<1% yeast protein
Yeast	Medium Nutrient	Twinrix	HepA+HepB	≤5% yeast protein
Yeast	Medium Nutrient	Vaxelis	DTaP+IPV+Hib+HepB	≤0.1 mcg
Yeast	Medium Nutrient	Vaxneuvance	Pneumococcal 15	Amount not specified in package insert

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

This table was last updated on December 20, 2024 | © 2024 Institute for Vaccine Safety