

# Vaccine Excipients

updated December 2018

Excipient	Type	Vaccine Name	Vaccine Type	Amount per dose
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	Preservative	IPOL	Polio	0.5%
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)
Albumin, Bovine	Stabilizer	Vaqta	HepA	<10 <sup>-4</sup> mcg
Albumin, Bovine Serum	Stabilizer	Ixiaro	Japanese Encephalitis	≤100 ng/mL
Albumin, Bovine Serum	Stabilizer	Pentacel	DTaP+IPV+Hib	≤50 ng
Albumin, Bovine Serum	Stabilizer	Quadracel	DTaP+IPV	≤50 ng
Albumin, Bovine Serum	Stabilizer	RabAvert	Rabies	"Small quantities", US origin
Albumin, Calf Serum	Stabilizer	Kinrix	DTaP+IPV	In cell culture growth
Albumin, Calf Serum	Stabilizer	Pediarix	DTaP+HepB+IPV	In cell culture growth
Albumin, Calf Serum	Stabilizer	Zostavax	Zoster	Trace amounts
Albumin, Calf Serum Protein	Stabilizer	IPOL	IPV	<50 ng
Albumin, Egg (Ovalbumin)	Residual Medium	Afluria	Influenza	<1 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Afluria Quad	Influenza	<1 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Fluarix Quad	Influenza	≤0.050 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Flulaval Quad	Influenza	≤0.3 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	FluMist Quad	Influenza	≤0.24 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	Fluvirin	Influenza	≤1 mcg
Albumin, Egg (Ovalbumin)	Residual Medium	RabAvert	Rabies	≤3 ng
Albumin, Fetal Bovine Serum	Stabilizer	RotaTeq	Rotavirus	Trace amounts
Albumin, Fetal Bovine Serum	Stabilizer	Varivax	Varicella	Trace amounts
Albumin, Human	Stabilizer	Imovax	Rabies	<100 mg
Albumin, Human	Diluent/Stabilizer	MMR-II	MMR	≤0.3 mg
Albumin, Human	Diluent/Stabilizer	ProQuad	MMRV	0.31 mg
Albumin, Human Serum	Diluent/Stabilizer	RabAvert	Rabies	≤0.3 mg
Aluminum	Adjuvant	Adacel	Tdap	0.33 mg
Aluminum	Adjuvant	Bexsero	Meningococcal Group B	0.519 mg Al <sup>3+</sup>
Aluminum	Adjuvant	BioThrax	Anthrax	1.2 mg/mL
Aluminum	Adjuvant	Boostrix	Tdap	≤0.39 mg
Aluminum	Adjuvant	Daptacel	DTaP	0.33 mg
Aluminum	Adjuvant	DT	DT	1.5 mg aluminum phosphate
Aluminum	Adjuvant	Engerix-B	HepB	0.5 mg/mL
Aluminum	Adjuvant	Gardasil	HPV	225 mcg
Aluminum	Adjuvant	Gardasil 9	HPV	500 mcg
Aluminum	Adjuvant	Havrix	HepA	0.5 mg/mL
Aluminum	Adjuvant	Infanrix	DTaP	≤0.625 mg
Aluminum	Adjuvant	Ixiaro	Japanese Encephalitis	250 mcg aluminum hydroxide
Aluminum	Adjuvant	Kinrix	DTaP+IPV	≤0.6 mg
Aluminum	Adjuvant	Pediarix	DTaP+HepB+IPV	≤0.85 mg
Aluminum	Adjuvant	PedvaxHIB	Hib+HepB	225 mcg
Aluminum	Adjuvant	Pentacel	DTaP+IPV+Hib	0.33 mg
Aluminum	Adjuvant	Prevnar 13	Pneumococcal 13-valent	0.125 mcg
Aluminum	Adjuvant	Quadracel	DTaP+IPV	0.33 mg
Aluminum	Adjuvant	Recombivax HB	HepB	0.5 mg/mL
Aluminum	Adjuvant	Td (generic)	Td	≤0.53 mg
Aluminum	Adjuvant	Tenivac	Td	0.33 mg
Aluminum	Adjuvant	Trumenba	Meningococcal Group B	0.25 mg
Aluminum	Adjuvant	Twinrix	HepA+HepB	0.45 mg
Aluminum	Adjuvant	Vaqta	HepA	0.45 mg
Amino Acid	Medium Nutrient	BioThrax	Anthrax	Unspecified amount in growth medium
Amino Acid	Medium Nutrient	Flublok	Influenza	Ingredient in growth medium
Amino Acid	Medium Nutrient	Flublok Quad	Influenza	Ingredient in growth medium
Amino Acid	Medium Nutrient	Gardasil	HPV	Ingredient in growth medium
Amino Acid	Medium Nutrient	Gardasil 9	HPV	Ingredient in growth medium
Amino Acid	Medium Nutrient	Havrix	HepA	Amino acid supplement - 0.3% w/v
Amino Acid	Medium Nutrient	Menveo	Meningococcal	Ingredient in growth medium
Amino Acid	Medium Nutrient	MMR-II	MMR	Ingredient in growth medium
Amino Acid	Medium Nutrient	PedvaxHIB	Hib+HepB	Amount not specified in Package Insert
Amino Acid	Medium Nutrient	Recombivax HB	HepB	In fermentation medium
Amino Acid	Medium Nutrient	Rotarix	Rotavirus	In DMEM (Dulbecco's Modified Eagle Medium)
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	Vivotif	Typhoid	0.3-3.0 mg/capsule
Amino Acid (Arginine)	Medium Nutrient	FluMist Quad	Influenza	2.42 mg
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	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Pentacel	DTaP+IPV+Hib	Ingredient in purification

Ammonium Sulfate	Protein Purifier	Prevnar 13	Pneumococcal 13-valent	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Quadracel	DTaP+IPV	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Td (generic)	Td	Ingredient in purification
Ammonium Sulfate	Protein Purifier	Tenivac	Td	Ingredient in purification
Amphotericin B	Antimicrobial	RabAvert	Rabies	≤20 ng
Ascorbic Acid	Antioxidant	Vivotif	Typhoid	0.2-2.4 mg/capsule
Barium	Medium Nutrient	Fluad	Influenza	<0.5 mcg
Benzethonium Chloride	Preservative	BioThrax	Anthrax	25 mcg/mL
Beta-Propiolactone	Viral Inactivator	Afluria	Influenza	≤2 ng
Beta-Propiolactone	Viral Inactivator	Afluria Quad	Influenza	≤1.5 ng
Beta-Propiolactone	Viral Inactivator	Flucelvax Quad	Influenza	<0.5 mcg
Beta-Propiolactone	Viral Inactivator	Fluvirin	Influenza	≤0.5 mcg
Beta-Propiolactone	Viral Inactivator	Imovax	Rabies	<50 ppm
Beta-Propiolactone	Viral Inactivator	RabAvert	Rabies	Amount not specified
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	Amount not specified in Package Insert
Bovine Casein	Medium Nutrient	Pediarix	DTaP+HepB+IPV	Amount not specified in Package Insert
Bovine Casein	Medium Nutrient	Typhim Vi	Typhoid	Amount not specified in Package Insert
Bovine Casein	Medium Nutrient	Vivotif	Typhoid	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	Td (generic)	Td	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	Amount not specified in Package Insert
Bovine, Casamino Acid	Stabilizer	Menomune	Meningococcal	Amount not specified in Package Insert
Bovine, Casamino Acid	Stabilizer	Prevnar 13	Pneumococcal 13-valent	Amount not specified in Package Insert
Bovine, Casamino Acid	Stabilizer	Quadracel	DTaP+IPV	Amount not specified in Package Insert
Bovine, Casamino Acid	Stabilizer	Tenivac	Td	Amount not specified in Package Insert
Calcium Carbonate	Buffer	Rotarix	Rotavirus	Amount not specified in Package Insert
Calcium Chloride	Medium Nutrient	Afluria	Influenza	0.5 mcg
Calcium Chloride	Medium Nutrient	Afluria Quad	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
Chick Embryo	Residual Medium	MMR-II	MMR	No intact cells (may have trace residual protein)
Chick Embryo	Residual Medium	ProQuad	MMRV	No intact cells (may have trace residual protein)
Chick Embryo	Residual Medium	RabAvert	Rabies	No intact cells (may have trace residual protein)
Chick Embryo	Residual Medium	YF-Vax	Yellow Fever	Growth medium
Chicken fibroblasts	Protein Purifier	RabAvert	Rabies	Growth medium
Chlortetracycline	Antimicrobial	RabAvert	Rabies	≤200 ng
Citric Acid Monohydrate	Adjust pH	Fluad	Influenza	0.04 mg
CTAB	Protein Purifier	Fluad	Influenza	≤12 mcg
CTAB	Protein Purifier	Flucelvax Quad	Influenza	≤18 mcg
Dextrose	Medium Nutrient	DT	DT	Amount not specified in Package Insert
Dextrose	Medium Nutrient	Recombivax HB	HepB	Ingredient in fermentation medium
Dextrose	Medium Nutrient	Vivotif	Typhoid	Ingredient in medium
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
Dimethyl-beta-cyclodextrin	Medium Nutrient	Quadracel	DTaP+IPV	Ingredient in Stainer-Scholte medium
DNA	Residual Medium	Flublok	Influenza	≤10 ng
DNA	Residual Medium	Flublok Quad	Influenza	≤10 ng
DNA	Residual Medium	Flucelvax Quad	Influenza	≤10 ng MDCK cell
DNA	Residual Medium	Ixiaro	Japanese Encephalitis	≤200 pg/mL ('host cell DNA')
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	Zoster	Residual component of MRC-5 cells
DOPC	Adjuvant	Shingrix	Zoster	1 mg
EDTA	Preservative	FluMist Quad	Influenza	<0.37 mcg
EDTA	Preservative	RabAvert	Rabies	0.3 mg sodium EDTA

EDTA	Preservative	Varivax	Varicella	Trace amounts
Egg Protein	Residual Medium	Fluad	Influenza	<0.4 mcg
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	Preservative	BioThrax	Anthrax	100 mcg/mL
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 Quad	Influenza	≤5 mcg
Formaldehyde	Inactivating Agent	Flulaval Quad	Influenza	≤25 mcg
Formaldehyde	Inactivating Agent	FluZone High-Dose	Influenza	≤100 mcg
Formaldehyde	Inactivating Agent	FluZone Id Quad	Influenza	≤20 mcg
Formaldehyde	Inactivating Agent	FluZone Quad	Influenza	≤100 mcg
Formaldehyde	Inactivating Agent	Hiberix	Hib	<0.5 mcg (residual)
Formaldehyde	Inactivating Agent	Infanrix	DTaP	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	IPOL	Polio	≤0.02%
Formaldehyde	Inactivating Agent	Ixiaro	Japanese Encephalitis	≤200 pmm
Formaldehyde	Inactivating Agent	JE-Vax	Japanese Encephalitis	<100 mcg
Formaldehyde	Inactivating Agent	Kinrix	DTaP+IPV	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	Menactra	Meningococcal	<2.66 mcg
Formaldehyde	Inactivating Agent	Menveo	Meningococcal	≤0.30 mcg
Formaldehyde	Inactivating Agent	Pediarix	DTaP+HepB+IPV	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	Pentacel	DTaP+IPV+Hib	≤5 mcg (residual)
Formaldehyde	Inactivating Agent	Quadracel	DTaP+IPV	≤5 mcg
Formaldehyde	Inactivating Agent	Recombivax HB	HepB	<15 mcg/mL (residual)
Formaldehyde	Inactivating Agent	Td (generic)	Td	100 mcg
Formaldehyde	Inactivating Agent	Tenivac	Td	≤5.0 mcg (residual)
Formaldehyde	Inactivating Agent	Twinrix	HepA+HepB	≤0.1 mg formalin
Formaldehyde	Inactivating Agent	Typhim Vi	Typhoid	≤100 mcg (residual)
Formaldehyde	Inactivating Agent	Vaqta	HepA	<0.8 mcg
Galactose	Medium Nutrient	Vivotif	Typhoid	Ingredient in medium
Gelatin	Manufacturing Residue	JE-Vax	Japanese Encephalitis	500 mcg
Gelatin	Gelatin Capsules	Vivotif	Typhoid	Gelatin capsules
Gelatin	Stabilizer	YF-Vax	Yellow Fever	Amount not specified in Package Insert
Gelatin, Bovine	Stabilizer, solvent	RabAvert	Rabies	<12 mg polygeline
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 Quad	Influenza	2.00 mg/0.2 mL dose
Gelatin, Porcine, Hydrolyzed	Stabilizer	Zostavax	Varicella Zoster	15.58 mg
Gentamicin Sulfate	Antimicrobial	Fluarix Quad	Influenza	≤0.15 mcg
Gentamicin Sulfate	Antimicrobial	FluMist Quad	Influenza	<0.015 mcg/mL
Glutamate	Medium Nutrient	MMR-II	MMR	Ingredient in growth medium (Medium 199)
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
Hexadecyltrimethylammonium Bromide	Protein Purifier	Typhim Vi	Typhoid	Amount not specified in Package Insert
Histidine	Medium Nutrient	Bexsero	Meningococcal Group B	0.776 mg
Histidine	Medium Nutrient	Trumenba	Meningococcal Group B	10 mM
Hydrocortisone	Medium Nutrient	Fluad	Influenza	≤0.0025 ng
Hydrocortisone	Medium Nutrient	Fluarix Quad	Influenza	≤0.0015 mcg
Kanamycin	Antimicrobial	Bexsero	Meningococcal	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	BCG Vaccine	BCG	Amount not specified in Package Insert
Lactose	Stabilizer	Hiberix	Hib	12.6 mg
Lactose	Stabilizer	Menomune	Meningococcal	2.5-5 mg
Lactose	Stabilizer	Vivotif	Typhoid	<180-200 mg/capsule
L-cystine	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in Package Insert
L-histidine	Medium Nutrient	Gardasil	HPV	0.78 mg
L-histidine	Medium Nutrient	Gardasil 9	HPV	0.78 mg
L-tyrosine	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in Package Insert
Magnesium Stearate	Lubricant for capsule filling	Vivotif	Typhoid	3.6-4.0 mg/capsule
Magnesium Sulfate	Medium Nutrient	BCG Vaccine	BCG	Amount not specified in Package Insert
Magnesium Sulfate	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in Package Insert

Monosodium glutamate	Stabilizer	FluMist Quad	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
Mouse Serum Protein	Manufacturing Residue	JE-Vax	Japanese Encephalitis	<50 ng
MRC-5	Manufacturing Residue	Havrix	HepA	≤5 mcg/mL
MRC-5	Manufacturing Residue	Imovax	Rabies	Amount not specified in Package Insert
MRC-5	Growth Medium	Pentacel	DTaP+IPV+Hib	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
MRC-5	Manufacturing Residue	Vaqta	HepA	Amount not specified in Package Insert
MRC-5	Manufacturing Residue	Varivax	Varicella	Residual components
MRC-5	Manufacturing Residue	Zostavax	Varicella Zoster	Residual
Neomycin	Antimicrobial	Fluad	Influenza	≤0.02 mcg
Neomycin	Antimicrobial	Fluvirin	Influenza	≤2.5 mcg
Neomycin	Antimicrobial	IPOL	IPV	<5 ng
Neomycin	Antimicrobial	Kinrix	DTaP+IPV	≤0.05 ng
Neomycin	Antimicrobial	MMR-II	MMR	25 mcg
Neomycin	Antimicrobial	Pediarix	DTaP+HepB+IPV	≤0.05 ng
Neomycin	Antimicrobial	Pentacel	DTaP+IPV+Hib	<4 pg
Neomycin	Antimicrobial	ProQuad	MMRV	<16 mcg
Neomycin	Antimicrobial	Quadracel	DTaP+IPV	<4 pg
Neomycin	Antimicrobial	RabAvert	Rabies	<10 mcg
Neomycin	Antimicrobial	Vaqta	HepA	<10 ppb (residual)
Neomycin	Antimicrobial	Varivax	Varicella	Trace amounts
Neomycin	Antimicrobial	Zostavax	Varicella Zoster	Trace amounts
Neomycin Sulfate	Antimicrobial	Afluria	Influenza	≤61.5 ng
Neomycin Sulfate	Antimicrobial	Afluria Quad	Influenza	≤81.8 ng
Neomycin Sulfate	Antimicrobial	Havrix	HepA	≤40 ng
Neomycin Sulfate	Antimicrobial	Imovax	Rabies	<150 mcg
Neomycin Sulfate	Antimicrobial	Twinrix	HepA+HepB	≤20 ng
Nonylphenol Ethoxylate	Surfactant	Fluvirin	Influenza	≤0.015% w/v
Octoxynol-10 (Triton X-100)	Surfactant	Fluarix Quad	Influenza	≤0.115 mg
Octoxynol-10 (Triton X-100)	Surfactant	Flublok	Influenza	≤100 mcg
Octoxynol-10 (Triton X-100)	Surfactant	Flublok Quad	Influenza	≤100 mcg
Octylphenol Ethoxylate (Triton X-100)	Surfactant	FluZone High-Dose	Influenza	≤250 mcg
Octylphenol Ethoxylate (Triton X-100)	Surfactant	FluZone Intradermal Quad	Influenza	≤55 mcg
Octylphenol Ethoxylate (Triton X-100)	Surfactant	FluZone Quad	Influenza	≤250 mcg/0.5mL
Peptone, Soy	Medium Nutrient	Prevnar 13	Pneumococcal 13-valent	Growth medium
Peptone, Soy	Medium Nutrient	Recombivax HB	HepB	Ingredient in fermentation medium
Phenol	Preservative, antibacterial	PedvaxHIB	Hib+HepB	Ingredient in purification procedure
Phenol	Preservative	Pneumovax 23	Pneumococcal 23-valent	Saline containing 0.25% phenol
Phenol	Preservative	Typhim Vi	Typhoid	0.25%
Phenol Red	pH indicator, dye	Rotarix	Rotavirus	Ingredient in growth medium
Phenol Red Indicator	pH indicator, dye	Imovax	Rabies	20 mcg
Phosphate Buffer	Buffer	Afluria	Influenza	20 mcg monobasic potassium phosphate 80 mcg monobasic sodium phosphate 300 mcg dibasic sodium phosphate
Phosphate Buffer	Buffer	Afluria Quad	Influenza	20 mcg monobasic potassium phosphate 80 mcg monobasic sodium phosphate 300 mcg dibasic sodium phosphate
Phosphate Buffer	Buffer	Engerix-B	HepB	0.98 mg/mL disodium phosphate dihydrate 0.71 mg/mL sodium dihydrogen phosphate dihydrate
Phosphate Buffer	Buffer	Flublok	Influenza	0.195 mcg monobasic sodium phosphate 1.3 mg dibasic sodium phosphate
Phosphate Buffer	Buffer	Flublok Quad	Influenza	0.195 mcg monobasic sodium phosphate 1.3 mg dibasic sodium phosphate
Phosphate Buffer	Buffer	FluMist Quad	Influenza	0.96 mg/0.2 mL dose monobasic potassium phosphate 2.26 mg/dose dibasic potassium phosphate
Phosphate Buffer	Buffer	FluZone High-Dose	Influenza	Sodium phosphate-buffered isotonic sodium chloride solution - "quantity sufficient to appropriate volume"
Phosphate Buffer	Buffer	FluZone Intradermal Quad	Influenza	Sodium phosphate-buffered isotonic sodium chloride solution - "quantity sufficient to appropriate volume"
Phosphate Buffer	Buffer	FluZone Quad	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	Ixiaro	Japanese Encephalitis	0.5 mL phosphate buffered saline
Phosphate Buffer	Buffer	Menactra	Meningococcal	Sodium phosphate buffered isotonic sodium chloride solution, amount not specified
Phosphate Buffer	Buffer	MMR-II	MMR	Sodium phosphate, amount not specified
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	Twinrix	HepA+HepB	Amount not specified in Package Insert
Phosphate Buffer	Buffer	Typhim Vi	Typhoid	0.065 mg disodium phosphate
				0.023 mg monosodium phosphate
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 potassium phosphate monobasic
				0.57 mg sodium phosphate monobasic
Polymyxin	Antimicrobial	Fluvirin	Influenza	≤3.75 mcg
Polymyxin B	Antimicrobial	Afluria	Influenza	≤10.5 ng
Polymyxin B	Antimicrobial	Afluria Quad	Influenza	≤14 ng
Polymyxin B	Antimicrobial	I POL	Polio	25 ng
Polymyxin B	Antimicrobial	Kinrix	DTaP+IPV	≤0.01 ng
Polymyxin B	Antimicrobial	Pediarix	DTaP+HepB+IPV	≤0.01 ng
Polymyxin B sulfate	Antimicrobial	Pentacel	DTaP+IPV+Hib	<4 pg
Polymyxin B sulfate	Antimicrobial	Quadracel	DTaP+IPV	<4 pg
Polysorbate 20	Surfactant	Flublok	Influenza	≤27.5 mcg (Tween 20)
Polysorbate 20	Surfactant	Flublok Quad	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 80	Surfactant	Boostrix	Tdap	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	Fluad	Influenza	1.175 mg
Polysorbate 80	Surfactant	Fluarix Quad	Influenza	≤0.550 mg (Tween 80)
Polysorbate 80	Surfactant	Flucelvax Quad	Influenza	≤1500 mcg (Tween 80)
Polysorbate 80	Surfactant	Flulaval Quad	Influenza	≤887 mcg
Polysorbate 80	Surfactant	Gardasil	HPV	50 mcg
Polysorbate 80	Surfactant	Gardasil 9	HPV	50 mcg
Polysorbate 80	Surfactant	Hepelisav-B	HepB	0.1 mg/mL
Polysorbate 80	Surfactant	Infanrix	DTaP	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	JE-Vax	Japanese Encephalitis	<0.0007%
Polysorbate 80	Surfactant	Kinrix	DTaP+IPV	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	Pediarix	DTaP+HepB+IPV	≤100 mcg (Tween 80)
Polysorbate 80	Surfactant	Pentacel	DTaP+IPV+Hib	10 ppm
Polysorbate 80	Surfactant	Prevnar 13	Pneumococcal 13-valent	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 Group B	0.018 mg
Porcine DNA	Residual Medium	Rotarix	Rotavirus	PCV-1
Porcine DNA	Residual Medium	RotaTeq	Rotavirus	PCV-1 and PCV-2
Potassium Aluminum Sulfate	Adjuvant	Recombivax HB	HepB	Amount not specified in Package Insert
Potassium Chloride	Buffer	Afluria	Influenza	20 mcg
Potassium Chloride	Buffer	Afluria Quad	Influenza	20 mcg
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
Potassium Glutamate	Stabilizer	RabAvert	Rabies	1 mg
Protamine Sulfate	Protein Purifier	Ixiaro	Japanese Encephalitis	≤1 mcg/mL
Salts and Sugars, Inorganic	Medium Nutrient	BioThrax	Anthrax	Amount not specified in Package Insert
Salts, Inorganic	Medium Nutrient	DT	DT	Sodium chloride
Salts, Inorganic	Medium Nutrient	Twinrix	HepA+HepB	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	Afluria Quad	Influenza	4.1 mg sodium chloride
Salts, Mineral	Adjust tonicity	Bexsero	Meningococcal Group B	3.125 mg sodium chloride

Salts, Mineral	Adjust tonicity	BioThrax	Anthrax	0.85% sodium chloride
Salts, Mineral	Adjust tonicity	Boostrix	Tdap	4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	Engerix-B	HepB	9 mg/mL sodium chloride
Salts, Mineral	Adjust tonicity	Flublok	Influenza	4.4 mg sodium chloride
Salts, Mineral	Adjust tonicity	Flublok Quad	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	Heplisav-B	HepB	9.0 mg/mL sodium chloride
Salts, Mineral	Adjust tonicity	Hiberix	Hib	0.9% sodium chloride in diluent
Salts, Mineral	Adjust tonicity	Infanrix	DTaP	4.5 mg sodium chloride
Salts, Mineral	Adjust tonicity	Kinrix	DTaP+IPV	4.5 mg sodium chloride
Salts, Mineral	Adjust tonicity	MMR-II	MMR	Sodium chloride, amount not specified
Salts, Mineral	Adjust tonicity	Pediarix	DTaP+HepB+IPV	4.5 mg sodium chloride
Salts, Mineral	Adjust tonicity	PedvaxHIB	Hib+HepB	0.9% 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	Sodium chloride in DMEM (Dulbecco's Modified Eagle Medium)
Salts, Mineral	Adjust tonicity	Shingrix	Zoster	4.385 mg sodium chloride
Salts, Mineral	Adjust tonicity	Tenivac	Td	Sodium chloride, amount not specified
Salts, Mineral	Adjust tonicity	Twinrix	HepA+HepB	Sodium chloride, amount not specified
Salts, Mineral	Adjust tonicity	Typhim Vi	Typhoid	4.150 mg sodium chloride
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	YF-Vax	Yellow Fever	Diluent
Salts, Mineral	Adjust tonicity	Zostavax	Varicella Zoster	3.99 mg sodium chloride
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/1 mL dose
Sodium Citrate	Balance pH	RotaTeq	Rotavirus	Amount not specified in Package Insert
Sodium Citrate Dihydrate	Balance pH	Fluad	Influenza	0.66 mg
Sodium Deoxycholate	Surfactant	Fluarix Quad	Influenza	≤65 mcg
Sodium Deoxycholate	Surfactant	Flulaval Quad	Influenza	≤50 mcg
Sodium Hydroxide	Balance pH	RotaTeq	Rotavirus	Amount not specified in Package Insert
Sodium Metabisulphite	Stabilizer	Ixiaro	Japanese Encephalitis	≤200 ppm
Sodium Pyruvate	Medium Nutrient	Rotarix	Rotavirus	in DMEM (medium)
Sodium Taurodeoxycholate	Protein Purifier	Afluria	Influenza	≤10 ppm (residual)
Sodium Taurodeoxycholate	Protein Purifier	Afluria Quad	Influenza	≤10 ppm (residual)
Sorbitan Trioleate	Balance pH	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
Sorbitol	Stabilizer, solvent	YF-Vax	Yellow Fever	Amount not specified in Package Insert
Streptomycin	Antimicrobial	IPOL	Polio	200 ng
Succinate Buffer	Stabilizer	Prevnar 13	Pneumococcal 13-valent	295 mcg
Sucrose	Stabilizer	ActHIB	Hib	8.5%
Sucrose	Stabilizer	Afluria	Influenza	<10 mcg
Sucrose	Stabilizer	Afluria Quad	Influenza	<10 mcg
Sucrose	Stabilizer	Bexsero	Meningococcal Group B	10 mg
Sucrose	Stabilizer	FluMist Quad	Influenza	13.68 mg/0.2 mL dose
Sucrose	Stabilizer	JE-Vax	Japanese Encephalitis	40% w/v
Sucrose	Stabilizer	MMR-II	MMR	1.9 mg
Sucrose	Stabilizer	Pentacel	DTaP+IPV+Hib	42.5 mg
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	Varivax	Varicella	25 mg
Sucrose	Stabilizer	Vivotif	Typhoid	3.3-34.2 mg/capsule
Sucrose	Stabilizer	Zostavax	Varicella Zoster	31.16 mg
Thimerosal	Preservative	Afluria	Influenza	None in single dose; 24.5 mcg mercury only in multi-dose vial
Thimerosal	Preservative	Afluria Quad	Influenza	None in single dose; 24.5 mcg mercury only in multi-dose vial
Thimerosal	Preservative	Flucelvac Quad	Influenza	None in single dose; 25 mcg mercury only in multi-dose vial
Thimerosal	Preservative	Flulaval Quad	Influenza	None in single dose; 25 mcg mercury only in multi-dose vial
Thimerosal	Preservative	Fluvirin	Influenza	≤1 mcg/dose mercury in prefilled syringe; 25 mcg mercury only in multi-dose vial
Thimerosal	Preservative	FluZone Quad	Influenza	None in single dose; 25 mcg mercury/0.5 mL in multi-dose vial

Thimerosal	Preservative	JE-Vax	Japanese Encephalitis	0.007%
Thimerosal	Preservative	Menomune	Meningococcal	None in single dose; 25 mcg mercury only in diluent for multi-dose vial
Thimerosal	Manufacturing Residue	Td (generic)	Td	≤0.3 mcg mercury (trace amounts)
Vero Cells	Growth Medium	IPOL	Polio	Amount not specified in Package Insert
Vero cells	Medium Nutrient	Ixiaro	Japanese Encephalitis	Amount not specified in Package Insert
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	Rotarix	Rotavirus	Amount not specified in Package Insert
Vero Cells	Growth Medium	RotaTeq	Rotavirus	Amount not specified in Package Insert
Vitamins	Medium Nutrient	BioThrax	Anthrax	Ingredient in growth medium
Vitamins	Medium Nutrient	DT	DT	Ingredient in growth medium
Vitamins	Protein Purifier	Fluarix Quad	Influenza	≤0.135 mg α-tocopheryl hydrogen succinate
Vitamins	Protein Purifier	Flublok	Influenza	Ingredient in growth medium
Vitamins	Protein Purifier	Flublok Quad	Influenza	Ingredient in growth medium
Vitamins	Protein Purifier	Flulaval Quad	Influenza	≤320 mcg α-tocopheryl hydrogen succinate
Vitamins	Medium Nutrient	Gardasil	HPV	Ingredient in growth medium
Vitamins	Medium Nutrient	Gardasil 9	HPV	Ingredient in growth medium
Vitamins	Medium Nutrient	Hepelisav-B	HepB	Ingredient in grown media
Vitamins	Medium Nutrient	MMR-II	MMR	Ingredient in grown media
Vitamins	Medium Nutrient	Rotarix	Rotavirus	Amount not specified in Package Insert
Xanthan	Thickening agent	Rotarix	Rotavirus	Ingredient in diluent
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	Hepelisav-B	HepB	yeast protein: residual amounts (≤5% of total protein) yeast DNA: <20 pg
Yeast	Medium Nutrient	Menveo	Meningococcal	Ingredient in growth medium
Yeast	Medium Nutrient	Pediarix	DTaP+HepB+IPV	≤5% yeast protein
Yeast	Medium Nutrient	Prevnar	Pneumococcal	Ingredient in growth medium
Yeast	Medium Nutrient	Prevnar 13	Pneumococcal 13-valent	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	Vivotif	Typhoid	Amount not specified in Package Insert

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

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