

Joint Indicative List of Critical COVID-19 Vaccine Inputs (Version 2.0)

Date of this version: 2 June 2022

Note:

i) The joint indicative list seeks to compile information on the critical inputs for the manufacturing, distributing and administering of COVID-19 vaccines that has been produced by several organizations. It was first compiled by the WTO Secretariat as a working document to facilitate discussions at the WTO COVID-19 Vaccine Supply Chain and Regulatory Transparency Symposium that took place on 29 June 2021. The list is purely indicative and subject to further clarification, modification, and improvement based on inputs by pharma and customs experts. It is based on the HS 2022 version and is without prejudice to the actual tariff classification assigned by WTO Members' customs administrations at the time of importation. The list has no legal status and is without prejudice to the rights and obligations of WTO Members.

ii) The reference to "parts" in the description of the products does not include parts classified in their own right in Section 16 (e.g. valves, etc.) of the nomenclature, parts of general use (as defined in ...), or parts which are classified in chapter 90 in their own right, all of which remain in their own headings.

Disclaimer:

The information concerning the possible Harmonized System (HS) classification of the products in the list is based on an assessment by the WCO Secretariat of the probable classification. However, it has not at this stage been endorsed by the WCO Harmonized System Committee and hence is not official advice. Nothing in this document should be interpreted as an endorsement of the legal HS classification of these products by any of the contributors. With a view to minimizing regulatory and financial risk, operators are strongly encouraged to contact the Customs Administration of the importing country with a view to determining the specific classification of the products in question including, but not limited to, the use of advance rulings.

Living list:

If you would like to provide additional inputs or refer to any additional publication with relevant information concerning COVID-19 vaccine inputs, please contact Mr Dayong YU (Dayong.Yu@wto.org), Mr Eric NG SHING (Eric.NgShing@wto.org) and Mr Thomas VERBEET (Thomas.Verbeet@wto.org).

Contributors:

Asian Development Bank (ADB), Chad Bown & Chris Rogers, Coalition for Epidemic Preparedness Innovations (CEPI), DHL, OECD, Covid-19 vaccine manufacturers, Life Science Manufacturers' Association (LSMA), WCO, and WTO.

Other sources (publications):

WCO: [HS classification reference for vaccines and related supplies and equipment](#)
 OECD: [Using trade to fight COVID-19: Manufacturing and distributing vaccines](#)
 Bown & Rogers: [The US did not ban exports of vaccine supplies. But more help is needed](#)
 Evenett et al.: [The Covid-19 Vaccine Production Club - Simon J. Evenett](#)
 Innovation Council: [HS codes relevant to inputs for COVID-19 vaccines, therapeutics and diagnostics – Innovation Council](#)

ID	Category	Sub-category	Product	Additional information	Most likely HS2022 classification	Comments	Sources/Contributors
1	1. Vaccine manufacturing	1.1 Active ingredients	Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2	Of Pfizer-BioNTech, Moderna; Plasmid DNA used to manufacture the mRNA and the mRNA Drug Substance.	300241	These active products were described as mRNA nucleic acid-based vaccines that introduce an antigen-specific immunity into the body. The WCO HS Committee decided to classify all mRNA stemmed substances that encode for a specific protein of the pathogen contained in INN List 124 Covid-19 (Special Edition) in subheading 3002.41 as vaccines. (Note: this classification does not apply to mRNA that is not encoded to act as a vaccine - usually 2934.99)	Manufacturers' information, WCO, WTO
2	1. Vaccine manufacturing	1.1 Active ingredients	Recombinant, replication incompetent Ad26 vector, encoding a stabilized variant of the SARS-CoV-2 Spike (S) protein	Of Janssen	300241		Manufacturers' information, WCO, WTO
3	1. Vaccine manufacturing	1.1 Active ingredients	Recombinant, replication-deficient chimpanzee adenovirus vector encoding the SARS CoV 2 Spike (S) glycoprotein. Produced in genetically modified human embryonic kidney (HEK) 293 cells.	Of AstraZeneca	300241		Manufacturers' information, WCO, WTO
4	1. Vaccine manufacturing	1.2 Inactive ingredients	2[[polyethylene glycol]-2000]-N, N-ditetradecylacetamide	Of Pfizer-BioNTech	390729	Subject to more information as to whether the product could satisfy	Evenett et al., WTO
5	1. Vaccine manufacturing	1.2 Inactive ingredients	PEG2000-DMG: 1,2-dimystoyl-rac-glycerol,methoxypolyethylene glycol	Of Moderna	390729	the conditions stipulated in Note 3 to Chapter 34 (Organic surface active agents)	Evenett et al., WTO
6	1. Vaccine manufacturing	1.2 Inactive ingredients	1,2-distearoyl-sn-glycero-3-phosphocholine	Of Pfizer-BioNTech	292320		Evenett et al., Manufacturers' information, OECD, WCO, WTO
7	1. Vaccine manufacturing	1.2 Inactive ingredients	SM-102: heptadecane-9-yl 8-((2-hydroxyethyl) (6-oxo-6-(undecyloxy) hexyl) amino) octanoate	Of Moderna	292250		Evenett et al., Manufacturers' information, OECD, WCO, WTO
8	1. Vaccine manufacturing	1.2 Inactive ingredients	(4-hydroxybutyl)azanediy]bis(hexane-6,1-diy)]bis(2-hexyldecanoate)	Of Pfizer-BioNTech and Moderna	292250		Manufacturers' information, WCO, WTO
9	1. Vaccine manufacturing	1.2 Inactive ingredients	Cholesterol	Of Pfizer-BioNTech and Moderna	290613		Evenett et al., OECD, WCO, WTO
10	1. Vaccine manufacturing	1.2 Inactive ingredients	Sodium chloride	Of Pfizer-BioNTech, Janssen and AstraZeneca	250100		Evenett et al., OECD, WCO, WTO
11	1. Vaccine manufacturing	1.2 Inactive ingredients	Monobasic potassium phosphate	Of Pfizer-BioNTech	283524		OECD, WCO, WTO
12	1. Vaccine manufacturing	1.2 Inactive ingredients	Potassium chloride	Of Pfizer-BioNTech	310420		OECD, WCO, WTO
13	1. Vaccine manufacturing	1.2 Inactive ingredients	Dibasic sodium phosphate dihydrate	Of Pfizer-BioNTech	283522		Evenett et al., OECD, WCO, WTO
14	1. Vaccine manufacturing	1.2 Inactive ingredients	Chemically pure sucrose, in solid form	Of Pfizer-BioNTech, Moderna and AstraZeneca	170199		OECD, WCO, WTO
15	1. Vaccine manufacturing	1.2 Inactive ingredients	Water for injection	Of Pfizer-BioNTech, AstraZeneca and Janssen	285390		WCO, WTO
16	1. Vaccine manufacturing	1.2 Inactive ingredients	Tromethamine; Tromethamine hydrochloride	Of Moderna	292219		Evenett et al., OECD, WCO, WTO
17	1. Vaccine manufacturing	1.2 Inactive ingredients	Acetic acid	Of Moderna	291521		Evenett et al., OECD, WCO, WTO
18	1. Vaccine manufacturing	1.2 Inactive ingredients	Sodium acetate	Of Moderna	291529		Evenett et al., OECD, WCO, WTO
19	1. Vaccine manufacturing	1.2 Inactive ingredients	Polysorbate-80	Of Janssen and AstraZeneca	340242		Evenett et al., OECD, WCO, WTO
20	1. Vaccine manufacturing	1.2 Inactive ingredients	2-hydroxypropyl-β-cyclodextrin	Of Janssen	350510		OECD, WCO, WTO
21	1. Vaccine manufacturing	1.2 Inactive ingredients	Citric acid monohydrate	Of Janssen	291814		OECD, WCO, WTO
22	1. Vaccine manufacturing	1.2 Inactive ingredients	Trisodium citrate dihydrate	Of Janssen	291815		OECD, WCO, WTO
23	1. Vaccine manufacturing	1.2 Inactive ingredients	Ethanol	Of Janssen and AstraZeneca	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80 % vol. Or higher	OECD, WCO, WTO

ID	Category	Sub-category	Product	Additional information	Most likely HS2022 classification	Comments	Sources/Contributors
24	1. Vaccine manufacturing	1.2 Inactive ingredients	Sodium hydroxide, solid	Of Janssen	281511		OECD, WCO, WTO
25	1. Vaccine manufacturing	1.2 Inactive ingredients	Sodium hydroxide, in aqueous solution (soda lye or liquid soda)	Of Janssen	281512		OECD, WCO, WTO
26	1. Vaccine manufacturing	1.2 Inactive ingredients	Hydrochloric acid	Of Janssen	280610		OECD, WCO, WTO
27	1. Vaccine manufacturing	1.2 Inactive ingredients	L-Histidine; L-Histidine hydrochloride monohydrate	Of AstraZeneca	293229		Evenett et al., OECD, WCO, WTO
28	1. Vaccine manufacturing	1.2 Inactive ingredients	Magnesium chloride hexahydrate	Of AstraZeneca	282731		Evenett et al., OECD, WCO, WTO
29	1. Vaccine manufacturing	1.2 Inactive ingredients	Disodium edetate dihydrate	Of AstraZeneca	292249		Evenett et al., OECD, WCO, WTO
30	1. Vaccine manufacturing	1.3 Other ingredients	Thimerosal	Preservatives - to prevent contamination	285210		OECD, WCO
31	1. Vaccine manufacturing	1.3 Other ingredients	Aluminium salts (alum)	Adjuvants - to help stimulate a stronger immune response	283330		OECD, WCO
32	1. Vaccine manufacturing	1.3 Other ingredients	Sorbitol	Stabilizers - to keep the vaccine potent during transportation and storage	290544		Bown & Rogers, OECD, WCO, WTO
33	1. Vaccine manufacturing	1.3 Other ingredients	Formaldehyde	Inactivating ingredients - to kill viruses or inactivate toxins	291211		OECD, WCO
34	1. Vaccine manufacturing	1.3 Other ingredients	Neomycin	Antibiotics - to prevent contamination by bacteria	294190		Bown & Rogers, OECD, WCO, WTO
35	1. Vaccine manufacturing	1.3 Other ingredients	Potassium chloride (in bulk)		310420	Note 4 (ii) to Chapter 31 directs	Evenett et al., WCO
36	1. Vaccine manufacturing	1.3 Other ingredients	Monobasic potassium phosphate		283524	Assumed pure. Hence separate chemically defined substance not specified in Notes 2 (a), 3 (a), 4 (a) or 5 to Chapter 31 and hence excluded by Note 1 (b) to Chapter 31.	Evenett et al., WCO
37	1. Vaccine manufacturing	1.3 Other ingredients	Enzymes used in vaccine research and development and in the vaccine manufacturing process	Raw material for mRNA vaccines	350790		Bown & Rogers, Manufacturers' information, WCO, WTO
38	1. Vaccine manufacturing	1.3 Other ingredients	Gelatin	Excipients - For preservation, stabilization or products used to increase the immune response of the vaccine	350300		ADB, WCO, WTO
39	1. Vaccine manufacturing	1.3 Other ingredients	Lipids used in the manufacturing of vaccines	Lipids are used to encapsulate the RNA of RNA vaccines in order to make it more stable		More information is needed for classification of fatty acids (saturated or unsaturated), triglycerides, phospholipid, phosphoinolipids, and emulsifiers.	Manufacturers' information
40	1. Vaccine manufacturing	1.3 Other ingredients	Emulsifiers	Emulsification - To help the water and oil based ingredients stay together		More information is needed for classification	ADB
41	1. Vaccine manufacturing	1.3 Other ingredients	Yeast Protein	Used in recombinant DNA technology for vaccine manufacturing		If protein isolates from yeast, heading 3504, - but if autolysed yeast, yeast extracts, or protein concentrates then heading 2106, needs form information.	ADB
42	1. Vaccine manufacturing	1.4 Consumables	Single-use bioreactor bags	Disposable bioreactor bag for cultivation, used for e.g. cell culture and fermentation	392690		CEPI, OECD, WCO, WTO
43	1. Vaccine manufacturing	1.4 Consumables	Liquid storage bags, of polymers of ethylene		392321		CEPI, WCO, WTO
44	1. Vaccine manufacturing	1.4 Consumables	Liquid storage bags, of other plastics		392329		CEPI, WCO, WTO
45	1. Vaccine manufacturing	1.4 Consumables	Erlenmeyer or other flasks, of fused quartz or other fused silica		701710		CEPI, Evenett et al., WCO, WTO
46	1. Vaccine manufacturing	1.4 Consumables	Erlenmeyer flasks, of other glass having a linear coefficient of expansion not exceeding 5 x 10 ⁻⁶ per Kelvin within a temperature range of 0 °C to 300 °C		701720		CEPI, Evenett et al., WCO, WTO,
47	1. Vaccine manufacturing	1.4 Consumables	Glass columns prepacked with chromatography media	Key consumable in isolating biological particles/antigens necessary in COVID-19 vaccine production. Pre-packaged columns act as modular units in high-production biopharma chromatography processes	701720	Also possibly parts in 902790	Manufacturers' information
48	1. Vaccine manufacturing	1.4 Consumables	Erlenmeyer or other flasks, of other glass		701790		CEPI, Evenett et al., WCO, WTO
49	1. Vaccine manufacturing	1.4 Consumables	Columns for small and large molecule analysis	Analytical Chromatography columns are used to perform quality control analyses for vaccine batches, which is important to release the batches	902781, 902789, 902790	Chromatography columns (902790).	Manufacturers' information
50	1. Vaccine manufacturing	1.4 Consumables	Cell culture media	Prepared culture media for the development or maintenance of micro-organisms (including viruses and the like) or of plant, human or animal cells	382100		CEPI, OECD, WCO, WTO
51	1. Vaccine manufacturing	1.4 Consumables	PETG sterile bottle, including Erlenmeyer flasks of plastic and sterilized by gamma-irradiation		392330		CEPI, WCO, WTO
52	1. Vaccine manufacturing	1.4 Consumables	Reagents, reagent packs, and laboratory kits		382219, 382290	Certified reference materials (382290)	Bown & Rogers, Evenett et al., OECD, WCO, WTO
53	1. Vaccine manufacturing	1.4 Consumables	Sterile connectors and fittings for single-use fluid handling systems, of plastic	used for sterile transfer of liquids at all stages of vaccine manufacturing process	391721, 391722, 391723, 391729, 391731, 391732, 391733, 391739, 391740		Bown & Rogers, WCO, WTO, Manufacturers' information
54	1. Vaccine manufacturing	1.4 Consumables	Vaccine vial monitor, of paper, printed		482110		Bown & Rogers, WCO, WTO
55	1. Vaccine manufacturing	1.4 Consumables	Vaccine vial monitor, of paper, not printed		482190		Bown & Rogers, WCO, WTO
56	1. Vaccine manufacturing	1.4 Consumables	Plastic bag with inbuilt filter for the sterile filtration, storage and transfer of biopharmaceutical fluids, of polymers of ethylene		392321	The proposed classification will apply if the plastic bag gives the essential character to the product in terms of GIR 3 (b). Classification	Bown & Rogers, WCO, WTO

ID	Category	Sub-category	Product	Additional information	Most likely HS2022 classification	Comments	Sources/Contributors
57	1. Vaccine manufacturing	1.4 Consumables	Plastic bag with inbuilt filter for the sterile filtration, storage and transfer of biopharmaceutical fluids, of other polymers		392329	should be confirmed with administration of importing country.	Bown & Rogers, WCO, WTO
58	1. Vaccine manufacturing	1.4 Consumables	Microporous plastic membrane materials incorporated in a housing		842129	Note that this heading does not cover simple filter media. Filter blocks of paper pulp fall in heading 48.12 and that many other filtering elements (ceramics, textiles, felts, etc.) are classified according to their constituent material	CEPI, WCO, WTO
59	1. Vaccine manufacturing	1.4 Consumables	Filters for fluids or syringe filters or cassette filters		842129		Bown & Rogers, WCO, WTO, Manufacturers' information
60	1. Vaccine manufacturing	1.4 Consumables	Filters and tubing, single-use assemblies consisting of plastic components that are used in diverse bioprocessing steps		842129	Provided the essential character is that of a filter	CEPI, OECD, WCO, WTO
61	1. Vaccine manufacturing	1.4 Consumables	Single-use assemblies			More information is needed for more precise classification	CEPI, WTO
62	1. Vaccine manufacturing	1.4 Consumables	Chromatography resin media	Key consumable in isolating biological particles/antigens necessary in COVID-19 vaccine production	391390	In case of natural polymers	Manufacturers' information
63	1. Vaccine manufacturing	1.4 Consumables	Chromatography resin media; organocatalysts used in therapeutics research	Key consumable in isolating biological particles/antigens necessary in COVID-19 vaccine production	391400	In case of ion-exchangers	Manufacturers' information
64	1. Vaccine manufacturing	1.4 Consumables	Borosilicate glass microfiber filter paper		701980, 701990		Manufacturers' information
65	1. Vaccine manufacturing	1.5 Equipment	Bioreactor (biological reactor), with thermal control mechanism	Bioreactor for biopharmaceutical cell culture	841989		WCO, WTO
66	1. Vaccine manufacturing	1.5 Equipment	Bioreactor (biological reactor), fitted with mechanical devices but no heating or cooling (including not being a double walled system for circulating heating or cooling fluid)	Bioreactor for biopharmaceutical cell culture	847989		OECD, WCO, WTO
67	1. Vaccine manufacturing	1.5 Equipment	Medical, surgical or laboratory sterilisers		841920		Bown & Rogers, OECD, WCO, WTO
68	1. Vaccine manufacturing	1.5 Equipment	Valve manifolds	used in fluid transfers in the vaccine manufacturing	848110	More information is needed for more precise classification	CEPI
69	1. Vaccine manufacturing	1.5 Equipment	Machinery for filling, closing, sealing, or labelling bottles, cans, boxes, bags or other containers; machinery for capsuling bottles, jars, tubes and similar containers		842230		Bown & Rogers, WCO, WTO
70	1. Vaccine manufacturing	1.5 Equipment	Microfluid and nanofluid mixers	Specific type of equipment for producing lipid nanoparticles (LNPs)	847982		OECD, WCO, WTO
71	1. Vaccine manufacturing	1.5 Equipment	Incubating shakers		847982		Bown & Rogers, WCO, WTO
72	1. Vaccine manufacturing	1.5 Equipment	Chromatography system		902720		Bown & Rogers, WCO, WTO
73	1. Vaccine manufacturing	1.5 Equipment	Part of chromatography equipment		902790	Classification in other subheadings also possible	Bown & Rogers, WCO, WTO
74	1. Vaccine manufacturing	1.5 Equipment	Manostats, other	adjustable pressure switches used for controlled fluid transfers	903220	More information is needed for more precise classification	CEPI
75	1. Vaccine manufacturing	1.5 Equipment	Regulating or controlling instruments and apparatus, excluding thermostats, manostats and hydraulic or pneumatic instruments		903289		Bown & Rogers, WCO, WTO
76	1. Vaccine manufacturing	1.5 Equipment	Plastic laboratory equipment	e.g. plastic pipettes and pipette tips	392690	More information is needed for more precise classification	CEPI, OECD, WCO, WTO, Manufacturers' information
77	1. Vaccine manufacturing	1.5 Equipment	Injection mold, used in manufacturing-of cartridges for COVID-19 molecular diagnostic testing kits.		848071	More information is needed for more precise classification	Manufacturers' information
78	1. Vaccine manufacturing	1.5 Equipment	Ceramic ball bearings, used by pharma and biotech during development and manufacture of vaccines including COVID-19		690919	More information is needed for more precise classification	Manufacturers' information
79	1. Vaccine manufacturing	1.5 Equipment	Parts of laboratory centrifuges	Centrifuges are used to separate viral loaded cells from cell culture media after upstream processing (fermentation) and for the purification of the antigens during downstream processing (purification)	842191		Manufacturers' information
80	1. Vaccine manufacturing	1.6 Packaging	Vials	Serum bottles, vials, and other pharmaceutical containers of glass	701090		OECD, WCO, WTO
81	1. Vaccine manufacturing	1.6 Packaging	Vials for vaccine packaging	To date, all Covid-19 vaccines are filled into vials made from borosilicate glass. The vials are then closed with rubber stoppers	701090		Manufacturers' information
82	1. Vaccine manufacturing	1.6 Packaging	Metal crimp seals for glass vials		830990		Manufacturers' information, WCO, WTO
83	1. Vaccine manufacturing	1.6 Packaging	Stoppers, of vulcanised rubber (excluding hard rubber)		401699		OECD, WCO, WTO
84	2. Vaccine storage and distribution		Cold boxes of plastics		392310	Excludes those with Section XVI features	OECD, WCO, WTO
85	2. Vaccine storage and distribution		Freezers of the chest type, not exceeding 800 l capacity		841830		WCO, WTO
86	2. Vaccine storage and distribution		Freezers of the upright type, not exceeding 900 l capacity		841840		OECD, WCO, WTO
87	2. Vaccine storage and distribution		Dry ice		281121		OECD, WCO, WTO
88	2. Vaccine storage and distribution		Ultra Low Temperature Freezers		841869	More information is needed for classification	ADB, Bown & Rogers, WTO
89	3. Vaccine administration		Adhesive dressings and other articles having an adhesive layer	Adhesive bandages put on the injected area after injection.	300510		WCO, WTO
90	3. Vaccine administration		Nitrile Glove (surgical)		401512		WCO, WTO
91	3. Vaccine administration		Nitrile Glove (other)		401512		Evenett et al., WCO, WTO
92	3. Vaccine administration		Syringes		901831		Evenett et al., OECD, WCO, WTO
93	3. Vaccine administration		Needles, of metal		901832		OECD, WCO, WTO

ID	Category	Sub-category	Product	Additional information	Most likely HS2022 classification	Comments	Sources/Contributors
94	3. Vaccine administration		Alcohol solution	Denatured ethyl alcohol, of any strength	220720		WCO
95	3. Vaccine administration		Alcohol solution	Undenatured, 70% ethyl alcohol	220890		WCO
96	3. Vaccine administration		Ultra-violet irradiation equipment for disinfection purpose		854370		WCO