DATA SHEET

1. PRODUCT NAME (strength pharmaceutical form)

ADACEL® POLIO 0.5 mL suspension for injection

Pertussis Vaccine - Acellular and Diphtheria and Tetanus Toxoids (Adsorbed) Combined with Inactivated Poliovirus Type 1, 2 and 3 (Vero cell)

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 0.5 mL dose of ADACEL POLIO contains:

2.5 mcg	pertussis toxoid
5 mcg	pertussis filamentous haemagglutinin
5 mcg	pertussis fimbriae types 2 and 3
3 mcg	pertussis pertactin
≥ 2 IU (2 LfU)	diphtheria toxoid
≥ 20 IU (5 LfU[a])	tetanus toxoid
40 DagU	poliovirus inactivated type 1, Vero (Mahoney)
8 DagU	poliovirus inactivated type 2, Vero (MEF1)
32 DagU	poliovirus inactivated type 3, Vero (Saukett)
1.5 mg	aluminium phosphate (equivalent to 0.33 mg aluminium)
0.6% v/v	phenoxyethanol
≤ 0.025 mcg	polymyxin B sulphate
≤ 0.02 mcg	neomycin
≤ 0.2 mcg	streptomycin
≤ 0.005 mg	formaldehyde
≤ 0.02 mg	glutaraldehyde
≤ 0.01%	polysorbate 80
water for injections to 0.5 mL	

[a] The formulated content of 5LfU per 0.5 mL of tetanus toxoid is the same as in the related product Tripacel®.

The vaccine is prepared from: adsorbed purified and formaldehyde detoxified diphtheria and tetanus toxins; adsorbed purified and glutaraldehyde detoxified pertussis toxin (pertussis toxoid or PT); adsorbed purified and formaldehyde treated filamentous haemagglutinin (FHA); adsorbed purified pertactin (PRN) and fimbriae types 2 and 3 (FIM); and poliomyelitis viruses type 1, 2 and 3 cultivated on Vero cells, purified and then inactivated by formaldehyde.

ADACEL POLIO is a diphtheria-tetanus-acellular pertussis combination vaccine (dTpa) combined with inactivated poliovirus vaccine with a reduced content of pertussis toxoid, filamentous haemagglutinin and diphtheria toxoid compared to paediatric diphtheria-tetanus-acellular pertussis (DTPa) formulations.

ADACEL POLIO should not be used as part of a primary course of immunisation for diphtheria, tetanus, pertussis or poliomyelitis.

The manufacture of this product includes exposure to bovine materials. No evidence exists that any case of vCJD (considered to be the human form of bovine spongiform encephalopathy) has resulted from the administration of any vaccine product.

3. PHARMACEUTICAL FORM

ADACEL POLIO is a sterile, uniform cloudy, white suspension for injection in prefilled syringes or vials.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

ADACEL POLIO is indicated for active immunisation against diphtheria, tetanus, pertussis and poliomyelitis in adults, adolescents and children aged 4 years and older as a booster following primary immunisation.

Children 4-6 years of age should have already received four doses of DTPa and IPV or OPV.

ADACEL POLIO is not intended for primary immunisation.

The use of ADACEL POLIO should be determined on the basis of official recommendations.

4.2 Dose and method of administration

ADACEL POLIO should be administered as a single injection of one dose (0.5 mL) by the intramuscular route. The same dosage applies to all age groups. ADACEL POLIO may be administered from the age of four years onwards.

ADACEL POLIO should be administered in accordance with the national recommendations as per the current Immunisation Handbook. For further information, refer to the current Immunisation Handbook.

ADACEL POLIO has not been studied in subjects with tetanus-prone injuries and should not be used in these circumstances.

Methods of administration

The vaccine's normal appearance is a cloudy, white suspension, which may sediment during storage. Shake the vial, or the prefilled syringe, well to distribute uniformly the suspension before administering the vaccine.

Parenteral biological products should be inspected visually for extraneous particulate matter and/or discolouration prior to administration. In the event of either being observed, discard the vaccine.

When administering a dose from a stoppered vial, do not remove either the stopper or the metal seal holding it in place. Once the vial has been opened, any of its contents not used immediately should be discarded. Aseptic technique must be used for withdrawal of the dose. Before injection, the skin over the site should be cleansed with a suitable germicide.

ADACEL POLIO should be administered intramuscularly. The preferred site is into the deltoid muscle.

The intravascular or subcutaneous routes should not be used.

ADACEL POLIO must not be mixed in the same syringe with other vaccines or other parenterally administered drugs or co-administered in the same syringe.

Product is for single use in one patient on one occasion only. Discard any residue.

4.3 Contraindications

ADACEL POLIO should not be administered to individuals who have previously had a hypersensitivity reaction to any vaccine containing diphtheria or tetanus toxoids, poliomyelitis viruses or pertussis (acellular or whole cell).

ADACEL POLIO should not be administered to individuals known to be hypersensitive to any component of the vaccine (see components listed in DESCRIPTION) or residues carried over from manufacture (such as formaldehyde, glutaraldehyde, streptomycin, neomycin and polymyxin B).

ADACEL POLIO should not be administered to individuals who experienced an encephalopathy of unknown origin within 7 days of previous immunisation with a pertussis-containing vaccine, or to individuals who have experienced other neurological complications following previous immunisation with any of the antigens in ADACEL POLIO.

Generally vaccination must be postponed in cases of moderate or severe febrile and/or acute disease. Low-grade fever does not constitute a contraindication.

4.4 Special warnings and precautions for use

If Guillain-Barré Syndrome or brachial neuritis has occurred following receipt of prior vaccine containing tetanus toxoid, the decision to give any vaccine containing tetanus toxoid should be based on careful consideration of the potential benefits and possible risks, such as whether or not the primary immunisation schedule has been completed.

ADACEL POLIO should not be administered to individuals with progressive or unstable neurological disorder, uncontrolled epilepsy, or progressive encephalopathy until a treatment regimen has been established, the condition has stabilised and the benefit clearly outweighs the risk.

The use of ADACEL POLIO as a primary series, or to complete the primary series, has not been studied. A booster response will only be elicited in individuals who have been previously primed by vaccination or by natural infection.

Regarding the interval between a booster dose of ADACEL POLIO and preceding booster doses of diphtheria and/or tetanus containing vaccines, the official recommendations should generally be followed.

There are currently no data upon which to base a recommendation for the optimal interval for administering subsequent booster doses with ADACEL POLIO to maintain antibody levels against pertussis.

As with all injectable vaccines, appropriate medical treatment and supervision should be readily available for immediate use in case of a rare anaphylactic reaction following the administration of the vaccine. As a precautionary measure, adrenaline injection (1:1,000) must be immediately available in case of unexpected anaphylactic or serious allergic reactions.

The vaccine must be given intramuscularly, as subcutaneous administration increased the chances of a local reaction. A persistent nodule at the site of injection may occur with all adsorbed vaccines, particularly if administered into the superficial layers of the subcutaneous tissue.

Do not administer by intravascular injection: ensure that the needle does not penetrate a blood vessel.

Because any intramuscular injection can cause an injection site haematoma in individuals with any bleeding disorders, such as haemophilia or thrombocytopaenia, or in individuals on anticoagulant therapy, intramuscular injection with ADACEL POLIO should not be administered to such individuals unless the potential benefits outweigh the risk of administration. If the decision is made to administer any product by intramuscular injection to such individuals, it should be given with caution, with steps taken to avoid the risk of haematoma formation following injection.

ADACEL POLIO should not be administered into the buttocks due to the varying amount of fatty tissue in this region, nor by the intradermal route, since these methods of administration may induce a weaker immune response.

Syncope (fainting) has been reported following vaccination with ADACEL POLIO. Procedures should be in place to prevent falling injury and manage syncopal reactions.

The immunogenicity of the vaccine could be reduced by immunosuppressive treatment or immunodeficiency. It is recommended to postpone the vaccination until the end of such disease or treatment if practical. Nevertheless, vaccination of HIV-infected individuals or individuals with chronic immunodeficiency, such as AIDS, is recommended even if the antibody response might be limited.

As with any vaccine, immunisation with ADACEL POLIO may not protect 100% of susceptible individuals.

Genotoxicity

ADACEL POLIO has not been evaluated for genotoxic potential.

Carcinogenicity

ADACEL POLIO has not been evaluated for carcinogenic potential.

Paediatric population

ADACEL POLIO should not be used for primary immunisation.

ADACEL POLIO is indicated for use in children aged four years and over.

Use in the elderly

ADACEL POLIO has been used in clinical studies in elderly persons aged 59 to 91 years of age.

4.5 Interactions with other medicines and other forms of interaction

A clinical study has shown that ADACEL POLIO can be safely administered concomitantly with hepatitis B vaccine, using a separate limb for the site of injection. ADACEL POLIO has safely been given concomitantly with measles-mumps-rubella vaccine (MMR™ II). Interaction studies have not been carried out with other vaccines, biological products or therapeutic medications. However, in accordance with commonly accepted immunisation guidelines, since ADACEL POLIO is an inactivated product, there is no theoretical reason why it should not be administered concomitantly with other vaccines or immunoglobulins at separate sites.

In the case of immunosuppressive therapy, refer to 4.4 Special warnings and precautions for use.

Effects on laboratory tests

Interference of ADACEL POLIO with laboratory and/or diagnostic tests has not been studied.

4.6 Fertility, pregnancy and lactation

Use in pregnancy (Category B2)

It is not known whether ADACEL POLIO can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Complete animal reproduction studies have not been done with ADACEL POLIO. ADACEL POLIO should be given to a pregnant woman only if clearly needed, based on an assessment of the benefits versus the risks.

Breastfeeding

It is not known whether the active substances included in ADACEL POLIO are excreted in human milk. The effect on breast-fed infants of the administration of ADACEL POLIO to their mothers has

not been studied. As ADACEL POLIO is inactivated, any risk to the mother or the infant is improbable. The risks and benefits of vaccination should be assessed before making the decision to immunise a nursing woman.

Fertility

ADACEL POLIO has not been evaluated for impairment of fertility.

4.7 Effects on ability to drive or use machines

Not relevant.

4.8 Undesirable effects

The reactions are listed within body systems and categorised by frequency according to the following definitions:

Very common	(≥ 1/10)				
Common	(<1/10	and	≥	1/100	)
Uncommon	(<1/100	and	≥	1/1,000	)

Clinical Trial Experience

Adolescents and Adults (992 subjects)

In clinical studies in which ADACEL POLIO was administered to adolescents and adults, the most frequently reported adverse reactions occurring over all age groups during the first 24 hours after vaccination included the following:

Very common: Injection site pain, erythema and swelling, tiredness, headache, bodyache, chills, nausea, fever, arthralgia or joint swelling

Common: Diarrhoea, vomiting

There was a trend for higher rates of local and systemic reactions in adolescents than in adults. In both age groups, injection site pain was the most common adverse reaction.

Late-onset local adverse reactions (i.e. a local adverse reaction which had an onset or increase in severity 3 to 14 days post-immunisation), such as injection site pain, erythema and swelling, occurred in less than 1.2%.

Table 1 summarises adverse events (%) in ADACEL POLIO (dTpa-IPV) recipients 0 - 24 hours post vaccination:

Table 1: Adverse Events (%) in ADACEL POLIO (dTpa-IPV) recipients 0 - 24 hours post vaccination

Event	Children*	Adolescents†		Adults ‡	
	Sweden 5.5 Yr	TD9707	TD9809	TD9707	
	dTpa-IPV (N = 240)	dTpa-IPV (N = 350)	dTpa-IPV§ (N =144)	dTpa-IPV (N = 366)	dT (N = 126)
Local Reactions	%	%	%	%	%
Redness (Any)	-	13.5	25.0	19.7	19.8
Redness (≥2 cm)	7.5	-	-	-	-
Redness (≥5 cm)	3.3	-	-	-	-
Swelling (Any)	-	16.4	21.5	14.2	7.2
Swelling (≥2 cm)	11.7	-	-	-	-
Swelling (≥5 cm)	3.3	-	-	-	-
Pain	60.8	87.9	95.8	84.4	82.5
Systemic Reactions	%	%	%	%	%
Fever**	9.7	10.8	2.1	1.4	0.0
Headache	-	26.4	35.4	15.0	13.5
Chills	-	13.8	17.4	3.8	3.2
Body ache	-	19.8	41.0	13.4	11.9
Tiredness	11.7	29.9	40.3	15.6	16.7
Sore/Swollen Joints	-	9.2	18.1	4.1	4.8
Nausea	-	10.6	13.9	6.8	5.6
Vomiting	0.4	1.2	1.4	0.3	0.8
Diarrhoea	0.4	1.2	2.1	3.6	2.4

* ≥5 to < 6 years in Swedish children; these children were primed with DTPa at 3, 5 and 12 months of age.

† ≥12 to < 19 years of age in TD9707, and ≥11 to <14 years of age in TD9809

‡ ≥19 to 60 years of age

§ The rates for dTpa-IPV administered alone or concomitantly with Hepatitis B vaccine were comparable.

** includes fever ≥38.0°C

Children 3 to 5 years old (150 subjects)

In two clinical studies (U01-Td5I-303 and U01-Td5I-402) 150 children primed at 2, 3 and 4 months of age with a DTPw vaccine (with no additional dose in the second year of life) received ADACEL POLIO at 3 to 5 years of age. The most frequently reported adverse reactions occurring during the first 7 days included the following:

Very common: Injection site pain, erythema and swelling; fatigue, fever ≥37.5°C, irritability

Common: Injection site bruising and dermatitis; diarrhoea, vomiting and rash

Children 5 to 6 years old (240 subjects)

In a clinical study, children were primed at 3, 5 and 12 months of age with a DTPa vaccine with no additional dose in the second year of life. These children received ADACEL POLIO at 5 to 6 years of age. The most frequently reported adverse reactions occurring during the first 24 hours included the following:

Very common: Injection site pain and swelling; fatigue

Common: Injection site erythema and pruritus; fever ≥38°C

Uncommon: Diarrhoea, vomiting

The rates of general symptoms after the first day but within 10 days after vaccination were low; only fever (≥38°C) and fatigue were reported in >10% of subjects. Transient severe swelling of the upper arm was reported in <1% of subjects.

Children 4 to 6 years old (298 subjects)

In a clinical study, children primed with DTPa at 2, 4 and 6 months and a booster at 18 months of age received ADACEL® (dTpa) at 4 to 6 years of age. The most frequently reported adverse reaction that occurred during the first 3 days was pain at 38.3%. Erythema and swelling were also commonly reported.

Post-Marketing Experience

The following additional adverse events have been spontaneously reported during the post-marketing use of ADACEL POLIO. Because these events are reported voluntarily from a population of uncertain size, it is not possible to reliably estimate their frequency or establish a causal relationship to vaccine exposure. These events have been very rarely reported.

Blood and lymphatic disorders:

Lymphadenopathy

Immune system disorders:

Anaphylactic reactions, such as urticaria, face oedema and dyspnoea.

Nervous system disorders:

Convulsions, vasovagal syncope, Guillian-Barré syndrome, facial palsy, myelitis, brachial neuritis, transient paresthesia/hypoesthesia of vaccinated limb, dizziness

Musculoskeletal and connective tissue disorders:

Pain in vaccinated limb

Gastrointestinal disorders:

Abdominal pain

General disorders and administration site conditions:

Malaise, Pallor, injection site induration

Extensive limb swelling, which may extend from the injection site beyond one or both joints and is frequently associated with erythema and sometimes with blisters, has been reported following administration of ADACEL POLIO. The majority of these reactions appeared within 48 hours of vaccination and spontaneously resolved over an average of 4 days without sequelae. The risk appears to be dependent of the number of prior doses of dTpa/DTPa vaccine, with a greater risk following the 4th and 5th doses.

4.9 Overdosage

Not applicable

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: bacterial and viral vaccine, ATC code: J07CA02.

Clinical efficacy and safety

Immune responses of adults, adolescents and children 3 to 6 years of age one month after vaccination with ADACEL POLIO are shown in Table 2 below.

Table 2: Immune Responses 4 Weeks After Vaccination

Antigen	Criteria	Adults and adolescents* (N = 986)	Children 5-6 years old† (N = 240)	Children 3-5 years old‡ (N = 148)
Seroprotection Rates				
Diphtheria (1)	≥0.1 IU/ mL	92.8%	99.4%§	100%
Tetanus (2)	≥0.1 IU/ mL**	100%	99.5%	100%
Polio 1	≥1:8 Dilution	99.9%	100%	100%
Polio 2	≥1:8 Dilution	100%	100%	100%
Polio 3	≥1:8 Dilution	100%	100%	100%
Seroconversion Rates				
Pertussis (3)				
PT	≥5 EU/mL††	99.7%	91.2%	99.3%
FHA	≥5 EU/mL††	99.9%	99.1%	99.3%
PRN	≥5 EU/mL††	99.6%	100%	100%
FIM	≥5 EU/mL††	99.8%	99.5%	100%
Pertussis				
PT	4-fold rise	84.0%	92.9%	92.6%
FHA	4-fold rise	78.4%	80.2%	91.2%
PRN	4-fold rise	95.1%	96.7%	96.0%
FIM	4-fold rise	88.9%	93.3%	86.5%

* From the age of 11 years onwards
† Primed with DTPa (Diphtheria toxoid (paediatric dose), tetanus toxoid and acellular pertussis vaccine) at 3 and 5 months with a booster at 12 months of age
‡ Primed with DTPw (Diphtheria toxoid (paediatric dose), tetanus toxoid and whole cell pertussis vaccine) at 2,3 and 4 months of age
§ Tested by Vero Cell Neutralization Assay (n=162)
** Measured by ELISA
†† EU = ELISA units: Antibody levels of >5 EU/mL were postulated as surrogate markers for protection against pertussis

The safety and immunogenicity profile of ADACEL POLIO in adults and adolescents was shown to be comparable to that observed with a single booster dose of an adult formulation diphtheria-tetanus (Td), aP or Td Polio adsorbed vaccines containing the same amount of tetanus and diphtheria toxoids, pertussis antigens and inactivated poliovirus types 1, 2 and 3 administered separately.

The lower response to diphtheria toxoid in adults probably reflected the inclusion of some participants with an uncertain or incomplete immunisation history.

Serological correlates for protection against pertussis have not been established. On comparison with data from the two separate pertussis efficacy trials conducted in Sweden between 1992 and 1996, where primary immunisation with Sanofi Pasteur Limited's acellular pertussis infant DTPa formulations conferred a protective efficacy of 85% against pertussis disease, it was considered that ADACEL POLIO had elicited protective immune responses.

Immune responses of children 4 to 6 years of age, primed with 4 doses of DTPa, one month after vaccination with ADACEL are shown in Table 3 below.

Table 3: Immune Responses 4 Weeks After Vaccination With ADACEL (dTpa)

Antigen	Criteria	Children 4-6 years old* (N =265)
Seroprotection Rates		
Diphtheria (1)	≥0.1 IU/ mL	100%
Tetanus (2)	≥0.1 IU/ mL[†]	100%
Seroconversion Rates		
Pertussis (3)		
PT	≥5 EU/mL[‡]	99.6%
FHA	≥5 EU/mL[‡]	99.6%
PRN	≥5 EU/mL[‡]	100.0%
FIM	≥5 EU/mL[‡]	100.0%
Pertussis		
PT	4-fold rise	91.9%
FHA	4-fold rise	88.1%
PRN	4-fold rise	94.3%
FIM	4-fold rise	94.6%

* Primed with DTPa at 2, 4 and 6 months and with a booster at 18 months of age
† Measured by ELISA
‡ EU = ELISA units: Antibody levels of >5 EU/mL were postulated as surrogate markers for protection against pertussis

Seroprotection rates 3 years post-vaccination with ADACEL POLIO in adults and adolescents are shown in Table 4 below.

Table 4: Seroprotection Rates 3 Years Post-Vaccination with ADACEL POLIO in Adults and Adolescents

Antigen	Criteria	Adults and adolescents* (N = 251)
Seroprotection Rates		
Diphtheria (1)	≥0.01 IU/mL	95.6%
Tetanus (2)	≥0.01 IU/mL[†]	100%
Polio 1	≥1:8 Dilution	100%
Polio 2	≥1:8 Dilution	100%
Polio 3	≥1:8 Dilution	100%
Seroconversion Rates		
Pertussis (3)		
PT	≥5 EU/mL[‡]	96.8%
FHA	≥5 EU/mL[‡]	100.0%
PRN	≥5 EU/mL[‡]	100.0%
FIM	≥5 EU/mL[‡]	98.0%

* From the age of 11 years onwards
† Measured by ELISA
‡ EU = ELISA units: Antibody levels of >5 EU/mL were postulated as surrogate markers for protection against pertussis

There are currently no data available on the antibody levels to any of the antigens in ADACEL POLIO beyond four weeks post-vaccination in children.

5.2 Pharmacokinetic properties

Not relevant

5.3 Preclinical safety data

Data in animals revealed no unexpected findings and no target organ toxicity.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

ADACEL POLIO contains aluminium phosphate, phenoxyethanol, polysorbate 80 and water for injections as excipients.

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

36 months from date of manufacture.

6.4 Special precautions for storage

Store at 2º to 8ºC. REFRIGERATE. DO NOT FREEZE. Do not use after expiry date.

6.5 Nature and contents of container

ADACEL POLIO is supplied in a prefilled syringe or vial for single dose (0.5 mL) use (vials not currently marketed). Each syringe comes with two separate needles, 16 mm and 25 mm in length. These separate needles are supplied to enable the vaccinator to choose the appropriate needle size for the vaccinee.

6.6 Special precautions for disposal

Any unused medicine or waste material should be disposed of in accordance with local requirements.

7. MEDICINE SCHEDULE

Prescription Medicine

8. SPONSOR

sanofi-aventis new zealand limited
Level 8
56 Cawley St
Ellerslie
Auckland
New Zealand
Tel: 0800 727 838

Manufacturer

SANOFI PASTEUR LIMITED
Toronto, Ontario, Canada

9. DATE OF FIRST APPROVAL

28 February 2008

10. DATE OF REVISION OF THE TEXT

19 January 2017

References List

1 Galazka AM. Module 2: Diphtheria. In: The immunological basis for immunization series. WHO/EPI/GEN/93.12 Geneva: World Health Organization; 1993.

2 Galazka AM. Module 3: Tetanus. In: The immunological basis for immunization series. WHO/EPI/GEN/93.13 Geneva: World Health Organization; 1993.

3 Storsaeter J. et al, Levels of anti-pertussis antibodies related to protection after household exposure to Bordetella pertussis. Vaccine 1998;16(20):1907-16.