# MONTANIDE™ ISA 71 R VG

*Ready to use oil adjuvant for veterinary vaccines*

MONTANIDE™ ISA 71 R VG is a **mineral oil** based adjuvant which has been developed for the formulation of **Water-in-Oil** (W/O) emulsions. It comprises a **specific enriched light mineral oil** and an extremely refined and **optimized surfactant system**. MONTANIDE™ ISA 71 R VG is free of animal origin ingredients.

MONTANIDE™ ISA 71 R VG has been developed to render **stable** emulsions when formulated with **destabilizing antigenic media** such as bacterial antigens. Compared to traditional oil emulsions, vaccines prepared with MONTANIDE™ ISA 71 R VG are **robust, stable** and **easy to inject**.

## Vaccine preparation:

To prepare 100 g of vaccine:

- MONTANIDE™ ISA 71 R VG 70 g
- Aqueous antigenic media 30 g

For preparation in volume, MONTANIDE™ ISA 71 R VG density is about 0.83 at 20°C.
Stable emulsions are obtained by mixing the aqueous medium into the MONTANIDE™ ISA 71 R VG, at room temperature or less, under strong agitation. The use of a **high shear mixer** is necessary to prepare a stable and efficient vaccine.

## Emulsion characteristics:

| PLACEBO EMULSION CHARACTERISTICS | | | |
|---|---|---|---|
| TYPE | VISCOSITY (mPa.s) | CONDUCTIVITY (µS/cm) | DROPLET SIZE (µm) |
| W/O | 35 at room temperature | <10 | Max 1 |

| PLACEBO EMULSION STABILITY | | |
|---|---|---|
| Storage at 4°C | Storage at 20°C | Storage at 37°C |
| >12 months | 6 months | 1 month |

***Ready to use oil adjuvant for stable W/O emulsion***

***Suitable for destabilizing antigen media***

***Known to stimulate cellular immune response***

***MONTANIDE™ listed on part I of the Annex of the European Council Regulation n° 37/2010/EU***



4984/GB/03/May 2017

## Immune response:

MONTANIDE™ ISA 71 R VG is capable of improving vaccine efficacy via the induction of a strong and long lasting immunity. It has been demonstrated during lab and field trial that is an excellent adjuvant to stimulate humoral and **cellular responses**. This product is recommended for bacterial, mycoplasma, viral or parasitic antigens.

## Animal species:

MONTANIDE™ ISA 71 R VG adjuvant is recommended for **avian** vaccines, especially **autogenous** ones**.**

## Advantages:

MONTANIDE™ ISA 71 R VG renders **stable** water-in-oil emulsions when formulated with **destabilizing** antigenic media or with a lower ratio of usage when **more aqueous phase** is needed.
Its innovative composition based on a specific **enriched mineral oil** also allows the induction of a high antigen specific **cell mediated** immune response.

## Safety and regulatory:

The toxicological tests made on MONTANIDE™ ISA range (Berlin test, Oral LD 50, IP LD 50, ocular irritation test, dermal irritation test, pyrogenicity) conclude to the non-toxicity and favourable tolerance of these adjuvants.

MONTANIDE™ adjuvants and their components have also been considered as safe by the Committee for Veterinary Medical Products (CVMP) for use in immunological products and are included in the part I of the Annex of the European Council Regulation n° 37/2010/EU as substances needing no further Maximum Residue Limit (MRL) studies, or in the Out Of Scope list (EMA-CVMP-519714-2009), or included in already registered veterinary commercial products.

The properties of the antigenic media are crucial for the vaccine efficacy but also for its safety. Each team developing a vaccine will have to study the safety and efficacy profile of the underdevelopment formula according to local market acceptance criteria.

*For more information on this product or for any advice regarding the optimization of your vaccine, please contact our teams on www.seppic.com*

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# MONTANIDE™ ISA 71 VG

*Ready to use oil adjuvant for veterinary vaccines*

MONTANIDE™ ISA 71 VG is a **mineral oil** based adjuvant which has been developed for the formulation of **Water-in-Oil** (W/O) emulsions. It is based on a **specific enriched light mineral oil** and a highly refined emulsifier obtained from mannitol and purified oleic acid from vegetable origin. MONTANIDE™ ISA 71 VG is free of animal origin ingredients.

Vaccine formulations with MONTANIDE™ ISA 71 VG induce strong and long term immunity. Compared to traditional oil emulsions, MONTANIDE™ ISA 71 VG emulsions are **stable** and **easy to inject**.

## Vaccine preparation:

To prepare 100 g of vaccine:

- MONTANIDE™ ISA 71 VG 70 g
- Aqueous antigenic medium 30 g

For preparation in volume, MONTANIDE™ ISA 71 VG density is about 0.83 at 20°C.
Stable preparations are obtained by mixing the aqueous medium into the MONTANIDE™ ISA 71 VG, at room temperature or less, under strong agitation. The use of a **high shear mixer** is necessary to prepare a stable and efficient vaccine.

## Emulsion characteristics:

| PLACEBO EMULSION CHARACTERISTICS | | | |
|---|---|---|---|
| TYPE | VISCOSITY (mPa.s) | CONDUCTIVITY (µS/cm) | DROPLET SIZE (µm) |
| W/O | 35 at room temperature | <10 | Max 1 |

| PLACEBO EMULSION STABILITY | | |
|---|---|---|
| Storage at 4°C | Storage at 20°C | Storage at 37°C |
| >12 months | 6 months | 1 month |

***Ready to use oil adjuvant for stable W/O emulsion***

***Known to stimulate cellular immune response***

***Easy to inject vaccines***

***Induces a strong and long lasting immune response***

***MONTANIDE™ listed on part I of the Annex of the European Council Regulation n° 37/2010/EU***



4112/GB/03/May 2017

## Immune response:

MONTANIDE™ ISA 71 VG is capable of improving vaccine efficacy via the induction of a strong and long lasting immunity. It has been demonstrated during lab and field trial that is an excellent adjuvant to stimulate humoral and **cellular responses**. This product is recommended for bacterial, mycoplasma, viral or parasitic antigens.

## Animal species:

MONTANIDE™ ISA 71 VG adjuvant is currently used in different vaccines for **poultry.**

## Advantages:

MONTANIDE™ ISA 71 VG induces a strong and long lasting protection; it is suitable when antigen immunogenicity is intrinsically low. Its innovative composition based on a specific **enriched mineral oil** also allows the induction of a high antigen specific **cell mediated** immune response.
It offers the possibility to reduce the injected dose without loss of efficacy. Indeed diluted antigenic media can be formulated while keeping the same level of protection with a constant injected volume.

## Safety and regulatory:

The toxicological tests made on MONTANIDE™ ISA range (Berlin test, Oral LD 50, IP LD 50, ocular irritation test, dermal irritation test, pyrogenicity) conclude to the non-toxicity and favourable tolerance of these adjuvants.

MONTANIDE™ adjuvants and their components have also been considered as safe by the Committee for Veterinary Medical Products (CVMP) for use in immunological products and are included in the part I of the Annex of the European Council Regulation n° 37/2010/EU as substances needing no further Maximum Residue Limit (MRL) studies, or in the Out Of Scope list (EMA-CVMP-519714-2009), or included in already registered veterinary commercial products.

The properties of the antigenic media are crucial for the vaccine efficacy but also for its safety. Each team developing a vaccine will have to study the safety and efficacy profile of the underdevelopment formula according to local market acceptance criteria.

*For more information on this product or for any advice regarding the optimization of your vaccine, please contact our teams on www.seppic.com*

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# MONTANIDE™ ISA 78 VG

*New generation high efficacy adjuvant for poultry vaccines*
*Technical Bulletin*

MONTANIDE™ ISA 78 VG is an mineral oil based adjuvant developed for the formulation of **Water-in-Oil** (W/O) emulsions. It is based on a mixture of **specific enriched mineral oil**, a **polymer based immunostimulant** and a highly refined emulsifier obtained from mannitol and purified oleic acid from vegetable origin.

MONTANIDE™ ISA 78 VG is free of animal origin ingredients.

## Vaccine preparation:

To prepare 100 g of vaccine:

- MONTANIDE™ ISA 78 VG 70 g
- Aqueous antigenic medium 30 g

For preparation in volume, MONTANIDE™ ISA 78 VG density is about 0.84 g/cm$^3$ at 20°C (70/30 w/w ratio is equivalent to ~74/26 v/v).

Stable preparations can be obtained by mixing the aqueous medium into MONTANIDE™ ISA 78 VG, at room temperature or less, under strong agitation. The use of a **high shear mixer** is necessary to prepare a stable and efficient vaccine. Mixing protocols at various scales are available on demand.

## Emulsion characteristics:

| PLACEBO EMULSION CHARACTERISTICS | | | |
|---|---|---|---|
| TYPE | VISCOSITY (mPa.s) | CONDUCTIVITY (µS/cm) | DROPLET SIZE (µm) |
| W/O | 35 at 20°C | <10 | Max 1.5 |

| PLACEBO EMULSION STABILITY | | |
|---|---|---|
| Storage at 4°C | Storage at 20°C | Storage at 37°C |
| > 12 months | > 6 months | 1 month |

***Powerful adjuvant based on immunostimulant and enriched mineral oil to improve immune response***

***Ready to use oil adjuvant for stable W/O emulsion***

***Easy to inject vaccines***

***No MRL concerns***



9530/GB/01/April 2020

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## Immune response:

MONTANIDE™ ISA 78 VG is capable of improving vaccine efficacy via the induction of fast onset of immunity and a strong and long lasting immune response. Lab and field scale trial demonstrated that MONTANIDE™ ISA 78 VG is an highly efficacious adjuvant to stimulate faster onset and stronger immune response than the standard mineral oil formulations. This product is recommended for poultry vaccines with viral, bacterial, mycoplasma, or parasitic antigens.

## Animal species:

MONTANIDE™ ISA 78 VG adjuvant recommended for **poultry.**

## Advantages:

MONTANIDE™ ISA 78 VG induces both a fast onset of immunity and a strong protection; it is suitable when antigen immunogenicity is intrinsically low. Its innovative immunostimulating composition and the specific **enriched mineral oil** allows the induction of a high antigen specific **cell mediated** immune response.

It also offers the possibility to reduce the injected dose without loss of efficacy. A diluted antigenic media can be formulated while keeping the same level of protection with a constant injected volume.

## Safety and regulatory:

The toxicological tests made on MONTANIDE™ ISA range (Berlin test, Oral LD 50, IP LD 50, ocular irritation test, dermal irritation test, pyrogenicity) conclude to the non-toxicity and favourable tolerance of these adjuvants.

MONTANIDE™ adjuvants and their components have also been considered as safe by the Committee for Veterinary Medical Products (CVMP) for use in immunological products and are included in the part I of the Annex of the European Council Regulation n° 37/2010/EU as substances needing no further Maximum Residue Limit (MRL) studies, or in the Out Of Scope list (EMA-CVMP-519714-2009), or included in already registered veterinary commercial products.

The properties of the antigenic media are crucial for the vaccine efficacy but also for its safety. Each team developing a vaccine will have to study the safety and efficacy profile of the underdevelopment formula according to local market acceptance criteria.

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# MONTANIDE™ ISA 61 VG

*Ready to use oil adjuvant for veterinary vaccines*

MONTANIDE™ ISA 61 VG is a **mineral oil** based adjuvant which has been developed for the formulation of **Water-in-Oil** (W/O) emulsions. It is based on a **specific enriched light mineral oil** and a highly refined emulsifier obtained from mannitol and purified oleic acid from vegetable origin. MONTANIDE™ ISA 61 VG is free of animal origin ingredients.

Vaccine formulations with MONTANIDE™ ISA 61 VG induce a strong and long term immunity. Compared to traditional oil emulsions, MONTANIDE™ ISA 61 VG emulsions are **robust**, **stable** and **easy to inject**.

## Vaccine preparation:

To prepare 100 g of vaccine:

- MONTANIDE™ ISA 61 VG 60 g
- Aqueous antigenic medium 40 g

For preparation in volume, MONTANIDE™ ISA 61 VG density is about 0.83 at 20°C.
Stable preparations are obtained by mixing the aqueous medium into the MONTANIDE™ ISA 61 VG at room temperature or less, under strong agitation. The use of a **high shear mixer** is necessary to prepare a stable and efficient vaccine.

## Emulsion characteristics:

| PLACEBO EMULSION CHARACTERISTICS | | | |
|---|---|---|---|
| TYPE | VISCOSITY (mPa.s) | CONDUCTIVITY (µS/cm) | DROPLET SIZE (µm) |
| W/O | 35 at room temperature | <10 | Max 1 |

| PLACEBO EMULSION STABILITY | | |
|---|---|---|
| Storage at 4°C | Storage at 20°C | Storage at 37°C |
| >12 months | 6 months | 1 month |

***Ready to use oil adjuvant for stable W/O emulsion***

***Known to stimulate cellular immune response***

***Easy to inject vaccines***

***Induces a strong and long lasting immune response***

***MONTANIDE™ listed on part I of the Annex of the European Council Regulation n° 37/2010/EU***





4524/GB/03/May 2017

## Immune response:

MONTANIDE™ ISA 61 VG is capable of improving vaccine efficacy via the induction of a strong and long lasting immunity. It has been shown during laboratory and field trials that it stimulates both **humoral** and **cell mediated immune responses**. This product is recommended for bacterial, mycoplasma, viral or parasitic antigens.

## Animal species:

MONTANIDE™ ISA 61 VG adjuvant is currently used in different vaccines for **cattle** and **small ruminants.**

## Advantages:

MONTANIDE™ ISA 61 VG is recommended when long term protection is needed, in **one-shot vaccination** protocols for instance. Its innovative composition based on a specific **enriched mineral oil** also allows the induction of a high antigen specific **cell mediated** immune response.
MONTANIDE™ ISA 61 VG renders very **fluid** vaccines. Its surfactant system is designed to offer **robust** formulation

## Safety and regulatory:

The toxicological tests made on MONTANIDE™ ISA range (Berlin test, Oral LD 50, IP LD 50, ocular irritation test, dermal irritation test, pyrogenicity) conclude to the non-toxicity and favourable tolerance of these adjuvants.

MONTANIDE™ adjuvants and their components have also been considered as safe by the Committee for Veterinary Medical Products (CVMP) for use in immunological products and are included in the part I of the Annex of the European Council Regulation n° 37/2010/EU as substances needing no further Maximum Residue Limit (MRL) studies, or in the Out Of Scope list (EMA-CVMP-519714-2009), or included in already registered veterinary commercial products.

The properties of the antigenic media are crucial for the vaccine efficacy but also for its safety. Each team developing a vaccine will have to study the safety and efficacy profile of the underdevelopment formula according to local market acceptance criteria.

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