sphereon®

Vaccination made easy.

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www.msd-animal-health.com



Nobilis

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Vaccination made easy.

They're the whole package



Vaccination made easy.

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Why should I make the change...

- Easy to open packaging
- **V** No contact between hands and vaccine
- Saves time in vaccine preparation
- 🖌 1000, 2500, 5000 & now also 10000 presentations
- Reduced potential to injure operator

- Innovative technology
- Same composition as existing vaccine
- Proven in pilot markets



- Easy to recycle packaging
- Simple colour-coded packaging
- Oissolves quickly and completely in water



Innovative

- Reduced preparation time
- Highly soluble
- Precise dosing

Convenient

- Four presentations
- Color-coded packaging
- Safe preparation
- "Contactless"
- Fast

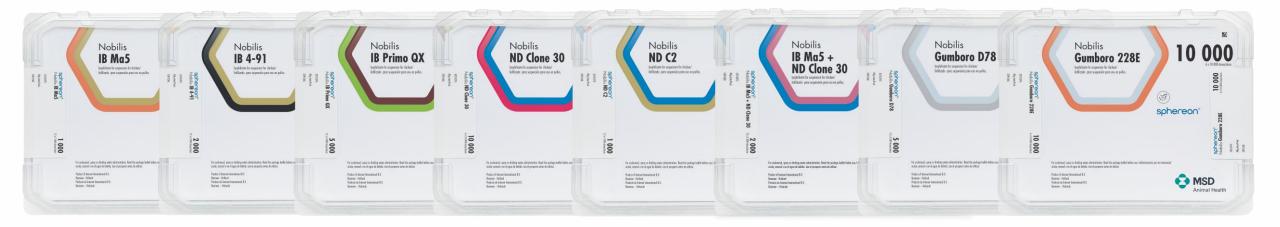
Sustainable

- Recyclable packaging
- Elimination of glass/rubber
- WeForest tree planting initiative



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Same great vaccines, new way to vaccinate









Revolutionary Sphereon[®] technology freeze dries live viral vaccines into **highly soluble spheres**.



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Nobilis[®] Sphereon[®] presentations are the **same formulation** as Nobilis[®] vaccines that come in traditional glass vials.





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Nobilis[®] Sphereon[®] presentations are the **same efficacy** as Nobilis[®] vaccines that come in traditional glass vials.



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Contact-free preparation, no need to immerse in water before opening.





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Sphereon[®] vaccines are packed in lightweight, easy-to-open, recyclable, aluminium cups in convenient dose sizes.





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Dissolving of the vaccine is **fast and easy** for administration via water, spray or eye-drop.





Sphereon[®] is available in **10 000 dose presentations**

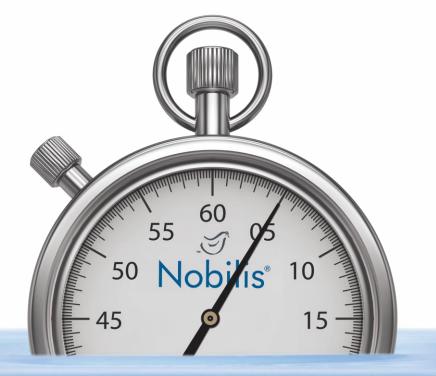
So now 30 000 vaccine doses are just <u>3</u> Sphereon[®] cups!





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Sphereon[®] technology streamlines vaccine preparation time by up to **27.8%** when compared to glass vials



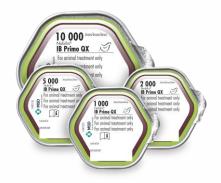
Sphereon[®] Vaccination made easy.







IS[®]



1000, 2500, 5000 & 10000 presentations



Simple color-coded packaging



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Manufacturing with Innovation at Salamanca

The vaccine
is frozen
into spheres

Before being freeze dried and stored at -20°C and low humidity





Transfer and storage is fully automated in low humidity conditions

Automated systems pack and label each cup according to country before shipping





The technology used to create Sphereon[®] ensures

Product authenticity Traceability

Accurate dosing

Supply reliability





Products available in Sphereon®



Nobilis® IBMa5 in Sphereon® format

Nobilis[®] IB Ma5 is a live vaccine against infectious bronchitis virus (IBV) serotype Massachusetts (strain Ma5), that is successfully used by poultry producers worldwide.





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Nobilis® IBMa5 in Sphereon® format



Features & Benefits

- A live attenuated IB Massachusetts type vaccine, effective against IB Massachusetts or serologically related types of infectious bronchitis.
- Can be used from 1 day of age onwards in broilers, layers and breeders.
- Safe in birds even during lay.
- Proven to be more immunogenic* than IB H120.
- Important component of the Protectotype with wide coverage against many IB variants.
- Can be used as a single component vaccine or as a combined product with ND vaccine Nobilis[®] ND Clone 30 without interference problems or simultaneous use with Nobilis[®] IB 4-91 or Nobilis[®] IB Primo QX*.
- Results in increased flock performance and profitability.



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Nobilis® IB 4-91 in Sphereon® format

Nobilis[®] IB 4-91 is a live vaccine against infectious bronchitis virus (IBV) serotype 4/91, that is successfully used by poultry producers worldwide.





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Nobilis® IB 4-91 in Sphereon® format



Features & Benefits

- A live attenuated IB vaccine effective against IB virus strain 4/91.
- Can be used from 1 day of age onwards in broilers, layers and breeders.
- Compatible with Nobilis[®] IB Ma5 from day-old onwards.
- Can be used as a single component vaccine or simultaneous use with Nobilis[®] IB Ma5.
- Safe in birds even during lay.
- Important component of the Protectotype with wide coverage against many IB variants.



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A WORLD OF PROTECTION Nobilis 1 000 IB Ma5 nhilisata far suspension far chicke Sphereon[®] Nobilis IB Mas Untroll Migdelefind BIP/CR T Nobilis 000 **IB 4-91** sphe philisate for suspension for chicken ofilizado para suspensión para uso en pollo LOLADE Mig.deau/ EXE/COD Nobilis IB 4-91 1 000 1 000 12 x 1 000 donay/data sphereon sphereon" Nobilis IB 4-91 1 000 temevitoria Boomeer - Holland Producto de Intervet S MSD Animal Health

It has been shown that by using a combination of two particular Protectotype vaccines Nobilis[®] IB Ma5 and Nobilis[®] IB 4-91, we can induce broad protection.



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- As well as inducing protection against homologous challenge by the Massachusetts and 4/91/793B strains, birds are protected against challenge by many other strains.
- The base for the Protectotype is the use of Nobilis[®] IB Ma5 in combination with Nobilis[®] IB 4-91.

HELPING TO PROTECT THE GLOBAL FOOD SUPPLY







Nobilis® IB Primo QX in Sphereon® format

Nobilis[®] IB Primo QX has been developed to protect breeders, layers and broilers from the IB QX strain and can be given from one day old onward.





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Nobilis® IB Primo QX in Sphereon® format



Features & Benefits

- Flexibility of application from one day old onwards.
- Hatchery application results in more accurate vaccination procedures and lower overall losses.
- Can be given by spray and eye/nose drop (intranasal/ocular route).
- Can be used with Nobilis[®] IB Ma5 to complete the Protectotype family

 mix Nobilis[®] IB Ma5 with Nobilis[®] IB Primo QX before oculonasal or
 spray administration.
 (Simultaneous use with Nobilis[®] IB Ma5).
- Indication for use: For the active immunization of chickens from one day-old onwards to reduce clinical signs of IBV serotype D388/QX.
- Onset of immunity: 3 weeks.
- Duration of immunity: 8 weeks.



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Nobilis® ND Clone 30 in Sphereon® format

Nobilis[®] ND Clone 30 is a live vaccine for the immunization of chickens against Newcastle Disease.





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Nobilis® ND Clone 30 in Sphereon® format



Features & Benefits

- Onset of immunity: 2 weeks.
- Duration of immunity: 6 weeks in chickens, 4 weeks in turkeys.
- Zero days withdrawal period for poultry meat and eggs.
- Can be given by spray, eye/nose drop (intranasal/ocular route), or in drinking water.
- Safe to use from 1 day of age onwards.



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Nobilis® NDC2 in Sphereon® format

Nobilis[®] ND C2 is a vaccine for the active immunization of chickens against Newcastle disease virus to reduce clinical signs and mortality.





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Nobilis® NDC2 in Sphereon® format



Features & Benefits

- Onset of immunity: 2 weeks after vaccination of seronegative animals.
- Duration of immunity: 5 weeks after vaccination of seronegative animals.
- Safety and efficacy data are available which demonstrate that this vaccine can be administered to 1-day old chicks on the same day.
- Administration via eye- or nose-drop method or via (coarse) spray.
- Zero days withdrawal period.



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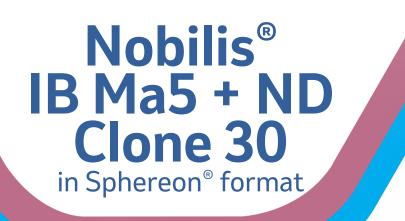
Nobilis® IBMa5 + ND Clone 30 in Sphereon® format

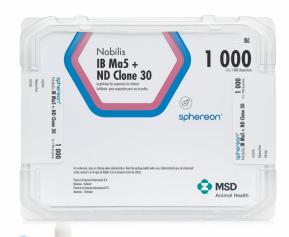
Nobilis[®] IB Ma5 + ND Clone 30 is a live attenuated freeze-dried vaccine used for the immunization of healthy chickens against the Massachusetts type of serologically related types of Infectious Bronchitis and against Newcastle Disease.





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Features & Benefits

- Can be given by spray and eye/nose drop (intranasal/ocular route).
- Nobilis[®] IB Ma5 + ND Clone 30 is safe to use from 1 day of age onwards.
- Duration of immunity: 6 weeks.
- Zero days withdrawal period.
- In areas where ND is endemic, a second vaccination with Clone 30 should be given at an age of approximately 4 weeks.



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Nobilis® Gumboro D78 in Sphereon® format

Nobilis[®] Gumboro D78 is a live virus vaccine against Gumboro disease (Infectious Bursal Disease).





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Nobilis® Gumboro D78 in Sphereon® format

Features & Benefits

- Administered in the drinking water.
- Zero days withdrawal period.



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Nobilis® Gumboro 228E in Sphereon® format

Nobilis[®] Gumboro 228E is a live, freeze-dried virus vaccine against Gumboro disease (Infectious Bursal Disease).





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Nobilis® Gumboro 228E in Sphereon® format

Features & Benefits

- Administered in the drinking water.
- Zero days withdrawal period.



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MSD Animal Health is committed to environmental responsibility and is making efforts to offset carbon emissions.

As well as making our packaging sustainable and recyclable, Sphereon[®] has also been working with WeForest to plant trees, to offset the carbon produced during production of Sphereon[®].

IN



WeForest Making Earth Cooler









Since 2016 the Sphereon[®] Tree Planting Initiative has helped plant

IN

OVER 54,000 TREES

in areas where they are needed most, including Brazil, India and Zambia.









Why Sphereon[®]?

Convenient: four presentations, color-coded packaging, safe preparation, "contactless", fast

Innovative: highly soluble, reduced preparation time, precise dosing

 Sustainable: recyclable packaging, elimination of glass/rubber, WeForest tree planting initiative



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THANK YOU



Animal Health