# NSA

Net contents: **20L**

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**A Fungicide for use in combination with sulphur, copper, potassium bicarbonate and potassium silicate for the Control of Powdery Mildew on Grapes.**

**A Fungicide for use in combination with copper for the Control of Downy Mildew and Suppression of Botrytis on Grapes.**

**An Adjuvant to improve coverage of fungicides on Grapes.**

**ACTIVE INGREDIENTS:** Contains 230 g/litre fatty acids (Potassium salts) in the form of a soluble concentrate.

**Distributed by:**
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GROWING TOGETHER

**Registered pursuant to the ACVM Act 1997. No.P9909**
**Approved pursuant to the HSNO Act 1996, Approval Code HSR000690**
See www.foodsafety.govt.nz for registration conditions.

**Registered to: Certis Belchim NV**
Technologielaan 7, 1840 Londerzeel, Belgium

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**LOW TOXICITY**
**Designed for biocidal action against fungous diseases. Do not apply onto or into water.**
Avoid contamination of any water supply with chemical or empty packaging.
**PRECAUTIONS:**
Keep out of the reach of children.
Store in original containers, tightly closed, in a cool dry, well ventilated place.
Do not eat, drink or smoke while using.
Avoid skin contact and inhalation of spray mist.
Wear overalls, gloves and goggles while mixing and spraying.
Remove protective clothing and wash hands and exposed skin before meals and after work.
Wash protective clothing daily after work.

**Storage & Disposal:** Store in accordance with current version of NZS 8409 Management of Agrichemicals. Store in original packaging, tightly closed, in a cool, dry, well ventilated place. Triple rinse container and empty rinsate into spray tank, recycle or otherwise bury in landfill.

**FIRST AID**
If splashed in the eyes, flush with plenty of water for at least 15 minutes. If splashed on the skin wash with plenty of water.

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**Resistance Warning**
Some naturally occurring fungi resistant to copper fungicides may exist through normal genetic variability in any population. These will not be controlled. The resistant individuals can eventually dominate the population if copper products are used repeatedly. To prevent or delay the development of resistance, follow label recommendations, and use in rotation with fungicides having a different mode of action. Since the occurrence of resistance is difficult to detect prior to use. Certis Belchim NV accepts no liability for any losses that may result from the failure of the recommended tank mixture to control resistant fungi or bacteria.

**DIRECTIONS FOR USE**
**It is an offence to use this product on animals**

**RATES OF USE AND TIMING OF APPLICATIONS**

| Disease | Rate | Time of application | Comment |
|---|---|---|---|
| Powdery Mildew Prevention | 1L NSA per 100L when used in combination with one or a maximum of two of the following- wettable sulphur, or cuprous oxide fungicide or potassium bicarbonate or potassium silicate at approved label rates. | From budburst (E-L 4) to the early onset of flowering (E-L 18), apply NSA at 10-14 day intervals<br>From the early onset of flowering (E-L 18) until one month after fruitset (E-L 27), apply NSA at 7 - 10 day intervals.<br>From one month after fruitset (E-L 27) to berry not quite ripe (E-L35-E-L 37), apply NSA at 10 - 14 day intervals. | Apply to the point of runoff (At least 12L/100m row at full canopy - 2 cane VSP equivalent)<br>Where a major rain event occurs during a period of growth replace the cover as soon as practicable.<br>Alternating the direction of applications assists with better coverage.<br>Growers should check with their winery regarding the use of sulphur close to veraison.<br>Control of powdery mildew is expected to have a suppression effect on following botrytis infection. |
| Adjuvant | 500ml NSA per 100L | As directed on the label of any compatible fungicide. | **NSA** used as an adjuvant in the spray mix with sulphur will improve contact, wetting and adhesion of the chemical in both high and low water rate regimes.<br>**NSA** used as an adjuvant in the spray mix with copper fungicides improve contact, wetting and adhesion of the chemical (avoid this spray mix through flowering if there is a risk of slow drying). |
| Downy Mildew Prevention | 2 L NSA per 100L and cuprous oxide fungicide to provide 22.5 - 45 g elemental copper per 100L<br>Copper product rate calculation<br>Target elemental copper (g) x 100 divided by<br>% Copper in product | Apply at budburst (E-L 4) and continue applying during the pre and post bloom period, every 10-14 days throughout the season as needed up to harvest.<br>Keep application intervals close (7 - 10 days) over extended wet periods. Do not apply if there is a risk of slow drying, particularly through flowering. | Apply to the point of run off (at least 12L/100m row at full canopy)<br>Use the low rate of copper fungicide at times of low disease pressure and the higher rate at times of high disease pressure or if high pressure is expected. If the vineyard had a downy mildew outbreak the previous season, it is deemed to be always under 'high disease pressure' for the current season.<br>Where a major rain event occurs, replace the cover as soon as practicable.<br>See mixing instructions |
| Botrytis Suppression | 2 L NSA per 100L and cuprous oxide fungicide at the approved label rate. | Integrate with Powdery Mildew and Downy Mildew prevention above<br>Apply at:<br>Onset of flowering (E-L 19),<br>At 80%-100% capfall (up to E-L 26)<br>At Pre bunch closure (prior to E-L 32)<br>At veraison (E-L 35)<br>Alternatively, apply at 10-14 day intervals throughout the season. | Apply to the point of runoff (At least 12L/100m row at full canopy - 2 cane VSP equivalent)<br>For best control of Botrytis flowering infection, ensure any applications are made at early/ onset of flowering (E-L 18-19) and 80-100% capfall (E-L 25/26) to bracket flowering.<br>Where a major rain event occurs during a period of growth replace the cover as soon as practicable.<br>Alternating the direction of applications assists with better coverage.<br>To stay within the wine industry guidelines of less than 3kg metallic copper per ha per season, alternate with 2% Protectorhml.<br>Use NSA as part of a robust Botrytis control programme. The tank mixture may not provide full control and should not be used during periods where high pressure is expected. |

**WITHHOLDING PERIOD:**
**3 days** before harvest
**Note:**This is a voluntary limit that is not residue based (MRL based). It covers off conservatively the rare occurrence of an off-flavour that has developed in the past with use of fatty acid products. This off-flavour has never been detected in wines.

**Leaf plucking in vineyards:** sheep must not be sent for slaughter or milked for 2 months after being removed from the vineyard (and placed on clean feed).

For export crops, growers should refer to industry export spray schedules for any specific restrictions before use.

**APPLICATION**
Throughout the season for all preventative disease applications, apply sufficient water to obtain full coverage of bunches and leaf canopy to the point of run off. Water rates used depend on canopy development (no less than 500 L/ha on 2.4m row (VSP 2 cane) equivalent, or 12L/100m at full canopy). Higher water rates will give better coverage and better disease control. Alternating the application direction assists with better coverage and disease efficacy.

Low water rates and concentrate spraying are not recommended.

**NSA's** mode of action is contact therefore efficacy will be optimised by viticultural practices that assist spray coverage such as well calibrated air assisted sprayers, sprayer speeds and adequate bunch exposure.

**MIXING INSTRUCTIONS:**
**General**
In all cases ½ to ¾ fill the spray tank with agitators running.

NSA may layer over time but will easily recombine. Stir, or shake or roll the container before dilution.

If HML Silco is included in the spray mix it should be put in FIRST through a clean filter basket with water running or directly into spray water.

Add **NSA** to the spray tank only after other materials have been added and are thoroughly mixed.

In many cases tank mix compatibility issues can be minimized or prevented by slurrying spray materials ahead of adding to the spray tank (so that additions are made less concentrated). Magnesium additives are a good example.

Do not leave any spray mix standing without agitation for long periods.

**For Powdery Mildew applications**
**NSA** is registered for Powdery Mildew control when used in combination with other compatible materials such as sulphur, cuprous oxide, potassium bicarbonate and potassium silicate.

In all cases where potassium bicarbonate is included in the spray mix, do not apply at strengths greater than 300g/100l during flowering or when plants are under significant water stress.
Control of powdery mildew is expected to have a suppression effect on following botrytis infection.

**For Downy Mildew and Botrytis applications**
**NSA** is registered for Downy Mildew control and suppression of Botrytis when used in combination with a cuprous oxide fungicide.
**Slurry** the required amount of **NSA** with the required amount of cuprous oxide fungicide together to form **a concentrate mix**. Allow to stand for a few minutes to ensure a homogeneous slurry. Add the concentrate mix through top filter basket or venturi AFTER other pesticides have been added such as sulphur (also see compatibility below), and then continue to fill with water.

**For Botrytis applications**
Effective Botrytis suppression relies in part on effective Powdery Mildew and Downy Mildew control.

**WATER HARDNESS**
**NSA** when mixed in hard water (high in dissolved mineral cations) may have mixing issues. **Where growers have a known water hardness issue it is recommended that a small premix is made to determine mixing.**

**COMPATIBILITY**
**NSA** is an alkaline material.
**NSA** is normally compatible with potassium bicarbonate, potassium silicate (HML Silco ), sulphur and copper fungicides (cuprous oxide and copper hydroxide (see table above), unadulterated seaweed products and magnesium products (Do not use potassium bicarbonate together with magnesium products).
**NSA** is not compatible with calcium products and many other chemicals directly or indirectly due to alkaline hydrolysis.
In all cases where a combination of materials are coming together for the first time, a precautionary approach should be used and a 'jar test' undertaken to assess for the formation of scums or precipitates, Likewise spray tank filters should also be checked through and after use.

Do not add other pesticides or materials unless they have been specifically cleared as being compatible. NSA can be used on certified organic properties as an adjuvant. Always consult organic certifiers before use.

**Exclusion of Liability: Please Read**
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