MAXSIL PRODUCT FACT SHEET

SuperFine Powder

Plant available silicon in a 5 micron powder for seed coats and liquid programs

MAXSIL
Silicon Agricultural Solutions



Amorphous silica from 100% recycled glass, ground to under 5 microns. One fine powder that rides with your seed, starter and spray programs and puts silicon straight into the root zone.

Small particles, steady release



Under 5 microns: it flows

Half the particles are smaller than 5 microns (D50), so it flows through any liquid system that holds constant pressure and agitation.

Hydrolyses, then dissolves

In moist soil the powder first hydrolyses, then dissolves to MSA. Some MSA is available at once; the rest sits in the soil and keeps releasing through the season.

Rides with your program

Mixes as a slurry for seed coats, in furrow starters, booms and pivots, so it goes on with work you already do.

What it drives: the six MSA pillars

1. **Soil Amendment**
   Silicon: MSA binds toxic aluminium and iron in acid soils and regulates heavy metal toxicity right where seed and roots start, so fine roots keep growing and exploring.

2. **Nutrient Efficiency**
   Silicon: MSA competes with phosphorus for the binding sites on iron, aluminium and clay. In furrow with the starter, it frees phosphorus right at the band.

3. **Strengthen Cells and Stems**
   Silicon: Silicon is laid down as silica in cell walls from day one, giving stiffer stems and tougher leaves that stand up to wind and lodging.

4. **Primes Biochemical Defence**
   Silicon: Silicon switches on the plant's own defence genes, so it responds faster and harder when disease attacks. It primes the crop; it does not replace a fungicide.

5. **Resists Insects, Mites and Caterpillars**
   Silicon: Silica in the leaf wears down chewing mouthparts and makes tissue harder to digest, so seedlings stand up better to early pests.

6. **Regulates Metabolism and Stress**
   Silicon: Silicon helps the plant manage water, heat and salt, keeping leaves working when conditions turn, so the crop holds yield and quality.

SOLUBLE SILICON IS MSA

> Plants can only take up silicon in its soluble, plant available form: monosilicic acid, known as MSA. In moist soil SuperFine hydrolyses, then dissolves to MSA: some straight away, the rest over time.

POWDER

Form	**Fine white to grey powder**
Particle size	**D50 <5 µm, D90 <20 µm**
pH	**7.5 to 8.5**
Bulk density	**800 to 1,000 kg/m³**

SOLID FORM

SiO_2	**72%**
Si	**33.7%**

PLANT AVAILABLE

Soluble Si	**3.6% | 36,000 ppm**
Orthosilicic acid	**12.3%**

Plant available: 5 day ISO 19747 test, Thornton Laboratories USA. The rest keeps dissolving over time.

OTHER ELEMENTS

Calcium (Ca)	**8.6%**
Sodium (Na)	**5.2%**

COMPOSITION

Calcium oxide	**12%**
Sodium carbonate	**12%**
Other	**4%**

MAXSIL SUPERFINE POWDER FACT SHEET

How to Apply

Placement, rates and tips for SuperFine Powder

MAXSIL
Silicon Agricultural Solutions



SuperFine Powder goes on as a slurry, with the equipment you already run. For best results, apply it in the rhizosphere: as close to the roots as you can.

1. Application and rates

✓ **Seed coat** ✓ **In furrow** ✓ **Liquid spray** ✓ **Fertigation** ✓ **Compost blend**

Mixing: slurry the powder with water first: 1:1 for seed coats, 1:2 for tanks. Jar test every new mix and apply the same day. Talk to MaxSil before injecting through fertigation pumps. Full set up in the MaxSil Liquid Application Guide.

Crop group kg/ha per growing season	Seed coat	In furrow liquid	Fertigation	Liquid spray
Cereals and Broadacre	3	15	—	50
Sugarcane	3	15	—	50
Cotton	3	15	—	50
Pastures (grass and legumes)	3	15	—	50 to 100
Turf	3	15	50	50
Horticulture	3	15	50	50
Tree Crops	3	15	50	50
Roots and Bulbs	3	15	—	50
Compost and potting mixes	Blended through the mix at 0.5 to 1 kg per m³			

kg/ha per growing season. Rates match the MaxSil Application Guide.

Rates are per growing season, best split: at sowing or planting, then two to three more in crop. Tree crops: last application at least 8 weeks before harvest. Not through drip lines: use Granule Plus.

2. Application tips for MSA

1. **Requires water to activate.** SuperFine hydrolyses, then dissolves to MSA, only in moist soil. Apply before moderate rain or irrigation, or in enough water to carry it into the root zone.
2. **Not a one time application.** Silicon works best applied over a full season: multiple applications, matched to soil conditions. Most growers see their best results after two full seasons or growing cycles.
3. **Acid, iron and aluminium rich soils grab silicon first.** Part of the first application binds to iron and aluminium in acid clays, which is also what frees phosphorus. Use the upper rate in the first season, or follow up with repeat applications.
4. **Closer to the root, less product.** Only silicon dissolved in the rhizosphere reaches the crop. A seed coat puts MSA where the first roots start: 3 kg/ha against 15 to 50 kg/ha as a liquid.
5. **Apply ahead of stressful periods.** Silicon has to be in the plant before heat, frost, pests or disease arrive. It prevents; it does not cure.
6. **Soil test to get the balance right.** Test pH, aluminium, phosphorus and $CaCl_2$ silicon before the first application, so you know what is in the soil and can balance the program. You get more value from both your fertiliser and your silicon, and you only trim phosphorus when the tests show it.
7. **Follow up with leaf tissue testing.** A mid season leaf test shows how much silicon is actually getting into the plant. Season on season, it tells you what each harvest removes and what the crop needs to reach target yield, so you can set the next rate with confidence.

Contact MaxSil for crop specific information: 0468 000 879 or maxsil.com.au

HANDLING AND STORAGE

- Offered in 1,000 kg bulk bags or 18 kg bags
- Bulk bags suit batching big tanks; 18 kg bags suit seed treaters and small tanks
- Store dry and cool, in closed bags

SAFETY

Amorphous, not crystalline. SuperFine is amorphous silica, with less than 1% crystalline silica. Silicosis comes from breathing crystalline silica dust, such as quartz. The WHO cancer agency (IARC) classes amorphous silica as Group 3, not classifiable as a cancer risk.

General cautions:

- Avoid making or breathing dust
- Wear a P2 mask, gloves and eye protection
- Wash hands after handling

Find us at your nearest reseller or online at www.maxsil.com.au

1,000 kg bulk bag	**MAXSILICON36.1000B**
56 x 18 kg bags	**MAXSILICON36.0018X**

OTHER MAXSIL PRODUCTS



Granule Plus
Total Si 25%
Soluble Si 1%
Soluble silicon with humates and carbon. Spreads with your fertiliser.



Mini Prill
Total Si 25%
Soluble Si 1%
A smaller 1 to 2 mm prill for a finer spread. Best for home gardens and turf.



Suspension Concentrate
Soluble Si 1.51%
Coming soon. Ready to use liquid: no mixing on site. Call 0468 000 879 for details.

MAXSIL SUPERFINE POWDER FACT SHEET

Synergies

Silicon working with your fertiliser program



MaxSil works alongside the fertilisers you already use. Silicon does not replace them; it helps the crop get more from each input.

What happens when silicon is combined with other inputs

COMBINING SUPERFINE POWDER WITH YOUR PROGRAM	
Urea 46% N	**Silicon and nitrogen are one of the most studied pairings in agronomy.** Silicon helps roots take up nitrate and keeps leaves green and working for longer, so more of each kilogram of applied nitrogen ends up in the crop rather than lost to the air or below the root zone.
DAP and MAP DAP 18% N, 20% P; MAP 10% N, 22% P	**Silicon competes with phosphate for binding sites, helping release locked up phosphorus.** On soils that hold phosphorus on iron, aluminium and clay, MSA takes up the binding sites, so more of the applied and legacy phosphorus stays plant available. Best when placed together in the band.
MOP, Muriate of Potash About 50% K	**Silicon helps the crop take up and hold potassium.** Silicon lifts potassium uptake and keeps the potassium to sodium balance in the leaf healthy, especially under salt or drought, and eases the stress of a short potassium supply. Potassium runs water control in the leaf while silicon strengthens the tissue, so the two work toward the same outcome.
Lime $CaCO_3$	**Lime corrects pH; silicon deals with the aluminium and iron at the root.** Lime works slowly through the profile. MSA binds toxic aluminium and iron right where the roots are, so the crop gets relief while the lime does its work. A practical fit for acid soils.
Gypsum $CaSO_4$: Ca and S	**Complementary: gypsum works on the soil, silicon works on the plant.** Gypsum improves structure and supplies calcium and sulphur. Silicon strengthens cell walls and supports stress tolerance. No known antagonism; it fits within existing soil programs.
Boron Trace element	**Boron is a key synergistic trace element, catalysing nutrient uptake, with a strong synergy with silicon.** Boron and silicon both build strong cell walls and new growth. Keep boron in the program alongside MaxSil, especially in brassicas, horticulture and tree crops.

General guidance. Responses vary with soil, crop and season. Soil test first, follow up with leaf tissue testing, and adjust rates on your own results.

HOW TO COMBINE

- Premix as a slurry, then add to your liquid fertiliser tank
- Mixes with most NPK inputs and trace elements, including boron
- Jar test every new tank mix
- Can be blended into granule and compost mixes

THE PRINCIPLE

Fertiliser supplies the nutrients. Silicon helps the plant find, take up and use them, and stand up to the stress that wastes them.

TALK TO US

For a crop specific program: 0468 000 879 or maxsil.com.au