

North America | Polymer Guide




germains[®]
seed technology

We Maximize Nature's Potential[®]

Introduction

Founded in 1871, Germains Seed Technology is one of the world's leading independent seed enhancement technology companies and has been serving the industry for over 145 years.

Today, Germains is committed to delivering industry-leading innovative seed technologies for a number plant species. Specializing in Priming, Pelleting, Filmcoat, Health, and Polymers, our team of industry experts is here to work in collaboration with you to deliver value throughout the supply chain.

Our vision:

“We Maximize Nature’s Potential”

Germains focuses on four main areas: sugar beet, field crops, vegetables, and flowers. We have over 200 dedicated experts strategically spread across two continents, who are committed to sharing and applying their knowledge and expertise.

We are seed technology specialists who offer a variety of customized seed enhancement services to suit a variety of different needs. We have a portfolio of seed coating technologies that are available for third-party usage, all of which can be applied to a wide range of plant species.





Seed Coating Technology

Seed coatings can fulfil a range of purposes, including:

- Adding weight to very light or fluffy seeds, such as grasses
- Increasing the size of very small or fine seeds, such as some flower and tobacco seeds.
- Increase the size of undersize seed for specific scale or planting requirements, such as sunflower and corn maize
- Improving the size and shapes of uneven or elongated seeds, such as sugar beet, lettuce, and carrot for greater precision of planting
- Applying seed treatments to protect the seed and seedling from pest and diseases, in a safe and accurate manner for the applicator and end user

Germain's Seed Coating Technology Systems

Our systems are comprised of a package of technologies, materials, skills, know-how, quality control and technical support required to carry out successful seed treatment, coating, and pelleting operations.

Your Germain's representative will be able to guide you through the polymer portfolio to help you select the series that is best for you based on your seed, other additives, and equipment used in your process.

Seed Coating Polymers

Seed coating polymers are used in the filmcoating process. The filmcoating process consists of the application of a thin water permeable polymer-based coating layer onto the seed, seed coating or pellet. Polymers are available in a range of colors, coverage qualities, opacities and finishes such as matt, shine or sparkle.

Main Uses of Filmcoating:

- Minimization of dust from coatings
- Precise and accurate distribution of agrochemical treatments
- Product Identification
- Seed applied crop protection
- Increased market appeal adding value to the seed
- Ability to check seed placement
- Binders and glues to hold powder coatings
- Meet FDA 40CFR.153.155 requirement for coloring seeds treated with pesticides.

Our spectrum brand is a seed coating polymer ranges include aqueous premixes of polymer-binder, opacifier, and dispersed pigment color.

Advantages of Polymers

A range of colors is available in each series, some also offering a neutral, uncolored version. Most are supplied in concentrated form, offering a variety of advantages, including:

- Better shelf life as a result of less settling out of components
- Greater flexibility of dilution at point of use
- Less water, resulting in reduced shipping and storage costs

There is a spectrum polymer coating for every application and every need.





Seed Coating Polymers

Germain's spectrum polymers have been tested and used through side-vented drum coaters, continuous coaters, and rotary batch seed treaters. The amount of materials required depends on a number of factors including:

- Type of seed-treatment equipment
- Species, color, size and surface texture of the seed
- Desired cosmetic quality
- Loading of active and inert solids required

Although the polymers can be used undiluted, some formulations are designed to be diluted with water before use. The level of dilution depends on the seed type and the equipment being used.

Rapid and Easy Use

Our range of polymers is designed to offer rapid and easy clean down between uses, therefore minimizing the impact on logistics of production. Your Germain's representative will be happy to provide guidance with the usage of any of the spectrum polymers.

Guidelines for Usage Rates

There are many possible variations to the materials that can be used; the Germain's representative will be able to guide you through application rates suited for your seed and equipment.

A preliminary trial run is always recommended, as this allows specific tailoring to individual seed requirement. Trial runs will enable you to check on the ease of use, cosmetic quality, and finish required for the final product specification.

Summary Table

Spectrum Range	Main Usage	Properties	Addition Rates Chemical Actives	Appearance
100 Series	Encrustment, Increasing seed weight, Improvement of plantability	Easy to pour, Low opacity, high binding	Low	Matt
500 'Sparkle' Series	Seed film-coating polymer, seed colourant	High opacity, high coverage, low binding capacity	Low	Sparkle/ Metallic soft color finish
500 'Shine' Series	Seed film-coating polymer, seed coloring and binding	High opacity, high coverage, low to medium binding capacity	Low	Shine/Satin bright color finish
700 Series	Seed coloring, wide range of cosmetic expectations, sensitive seed coating applications	Ideal for cost sensitive applications Including mobile treaters	Low, Medium & High	Matt/Flat solid color finish



Spectrum 100 Series

Main usage

- For encrustment work, spectrum 100 is the polymer of choice and is used extensively in this area
- The application of build-up of solids, such as seed coating and pelleting materials to increase seed weight and improve plantability

Product colors and codes

Spectrum 100 is available in a range of standard colors.

Neutral	100
Pink	128
Red	129
Blue	139
Green	149

Properties

- Easy to pour, co-polymer with low viscosity
- Low opacity
- High solids binding capacity
- Concentrated formulations for ease of handling

Recommended application rates

- Best used diluted with water in a 1:1 to 1:3 ratio
- Dilution rate is dependent on specific application and the amount of solids binding capacity required

Note: Spectrum 100 series is not recommended for high quality color cosmetic requirements

Spectrum 100 Series

Guideline Usage Rates

There are many possible variations of the materials that can be used; the table below is an approximation guide as to the amounts you might expect to use during a typical production run.

Adjustments to the suggested rates will allow specific tailoring to each seed application and cosmetic quality of the finished coating. A preliminary trial run is always recommended. Furthermore, if other materials are used or added, or if unique materials that do not conform to the suggested guidelines are used, it is recommended to try out a range of dilution rates with spectrum 100.

Such trials will provide valuable checks on ease of use and will help determine the chosen protocol to suit final product specification required, including coating strength and cosmetic finish.

Ingredients	Basic Coating			Field Seed Coating			High Quality Coating		
	% Build Up			% Build Up			% Build Up		
	50	100	300	50	100	300	50	100	300
100 Series	50	100	300	50	100	300	50	100	300
Water	100	200	600	100	200	600	100	200	600
Talc	50	100	300	450	900	2700	450	900	2850
Limestone	450	900	2700	-	-	-	-	-	-
Shining agent	-	-	-	50	100	300	-	-	-
Pearl Agent	-	-	-	-	-	-	50	100	150

Rates are expressed in grams of products applied per kilogram of seed.

The average Specific Gravity for the 100 Series is 1.18 kg/l

The final appearance is dependant on the variables as type of equipment, chemicals, coating materials, seed size etc.

Spectrum 500 'Shine' Series

Main usage

- Spectrum 500 'Shine' is a seed filmcoating polymer
- Designed for seed coloring and binding of treatments to seed, requiring low binding of solids e.g. liquid formulations and low rates of formulations

Product colours and codes

Spectrum 500 'Shine' red is our standard color for this series. Other colors available upon request.

Red Shine	529
-----------	-----

Properties

- Satin finish, with bright colors
- High opacity, high coverage quality
- Low to medium binding capacity
- Concentrated formulations for ease of handling
- Dilution rate is dependent on specific application and binding capacity required

Spectrum 500 Shine Series is ideal for obtaining bright colored seeds with a satin finish.





Spectrum 500 'Sparkle' Series

Main usage

- Spectrum 500 'Sparkle' is a seed filmcoating polymer
- Designed for seed coloring and binding of treatments to seed, requiring low binding of solids e.g. liquid formulations, low rates of formulations

Product colors and codes

Spectrum 500 'Sparkle' is available in a range of standard colors.

Red Sparkle	529
Blue Sparkle	539
Green Sparkle	549
Orange Sparkle	569

Properties

- High opacity, high coverage quality
- Low binding capacity
- Sparkle has an obvious metallic look to the finish
- Concentrated formulations for ease of handling
- Dilution rate is dependent on specific application and binding capacity required

500 Series Guideline Usage Rates

Vegetables

Seed Type Species	Good Quality Rate			High Quality Rate		
	500 Series	Water	Total	500 Series	Water	Total
Brassicas	20	15	35	27	20	47
Carrot	33	25	58	40	30	70
Chard	27	20	47	40	30	70
Cucurbit	27	20	47	33	25	58
Leeks	33	25	58	40	30	70
Onion	33	25	58	40	30	70
Parsley	33	25	58	40	30	70
Parsnip	27	20	47	33	25	58
Pepper	27	20	47	33	25	58
Tomato	33	25	58	40	30	70

Field Crops

Seed Type Species	Economical Rate			Good Quality Rate			High Quality Rate		
	500 Series	Water	Total	500 Series	Water	Total	500 Series	Water	Total
Alfalfa	20	15	35	27	20	47	20	15	35
Beans	33	25	58	40	30	70	18	0	18
Canola	27	20	47	40	30	70	20	10	30
Cereals	27	20	47	33	25	58	16	16	32
Cotton	33	25	58	40	30	70	20	15	35
Maize	33	25	58	40	30	70	10	10	20
Sorghum	33	25	58	40	30	70	5	10	15
Soy	27	20	47	33	25	58	8	2	10
Sunflower	27	20	47	33	25	58	30	15	45

Rates are expressed in grams of products applied per kilogram of seed.
The average Specific Gravity for the Spectrum 500 Series is 1.33 kg/l





Spectrum 700 Series

Main usage

- Seed coloring to fit a wide range of cosmetic expectations
- Seed treatments requiring low to high binding capacity
- Economically sensitive seed coating applications

Product colors and codes

The pack contains a high binding capacity polymer, and a choice of color pigments or neutral.

Neutral	700
Red	729

Properties

- Color prepared to own requirements
- High binding capacity
- Concentrated formulations for ease of handling

Recommended application rates

- Dilution rate is dependant on specific application and binding capacity required

Frequently Asked Questions

How are spectrum polymers packaged?

We provide a variety of packaging options to suit all logistical situations, including:

- 1000 kg (Intermediate Bulk Container)
- 25 and 210 kg plastic drums
- 10 kg plastic bottles

Note: Standard packaging for North America:

- 5 Gallon (2 x 2.5 Gallon Jugs)
- 5 Gallon Pail
- 55 Gallon Fiber Drum
- 265 Gallon Cage Tote

How long can spectrum Polymers be stored?

Our polymers are designed to remain stable in storage for one year period from the manufacture date on the label.

Polymers should always be stored in original or suitable containers, which are sealed, away from direct sunlight, and in temperature ranges of minimum 5°C/41°F to a maximum of 40°C/104°F. Under no circumstances may the material be allowed to freeze. Always mix well prior to use.

Which machine should I use with spectrum Polymers?

Spectrum polymers are specially formulated to perform equally well in continuous coaters, rotary batch coaters and side vented drum coaters.

How quickly can I get my order of spectrum products?

We aim to dispatch orders of our standard range of polymer and color blends within 15 days of receipt of order. Customized orders may take considerably longer, however, dispatch dates will always be discussed and confirmed.





Spectrum FAQ continued

Is there anything I should do prior to using spectrum polymers?

Storage, transport, and any interrupted use of the polymer will cause some settling of contents, mainly solids within the polymer. It is therefore essential spectrum polymers are thoroughly stirred before each use. The following are re-blending guidelines, as each user will have different equipment at their disposal.

1. The ideal disperser blade is about one-third of the diameter of the container to be mixed, and the height of contents to be mixed should be less than three times the diameter of the blade.
2. The blade should be positioned approximately at half mark of the total height to be mixed.
3. The polymer blend should be mixed thoroughly, as fast as possible, while preventing splashing and uptake of air into the mix.
4. The recommended mixing time is approximately 10 minutes, and agitation must continue until spectrum is ready to be used.
5. Agitation during use is recommended, but may not be required on a continual basis.
6. If large containers of spectrum are being divided up into smaller units, the largest container must be fully stirred first, prior to transfer of the blended polymer into smaller units. Once repackaged, the smaller packages must also be stirred before use.

What do I do about cleaning down the coating machine?

Each coating machine should be cleaned down immediately after use, or between treatments, using cold, clean water.

What about waste?

Liquid waste should be disposed of in compliance with the local waste disposal regulations, as well as recommendations stated on agrochemical manufacturer's labels, and our SDS documents.

Contact Us Today!



Pricing

Spectrum polymers price ranges are based on the quantity per order. Price breaks are based on 0-15 gallons, 16-60 gallons, 61 to 240 gallons, 241-499 gallons, and 500 to 999 gallons. For order of 1000 gallons or more, please contact your Germain's Sales Account Representative for special pricing.

Our Sales Team will be happy to assist you with determining the quantity of polymer you will need for your coating requirements. Please be sure to include the amount of seed you want to coat, the species and seed count per pound.

All sales are subject to the Germain's Terms & Conditions which can be found on germain's.com/terms-conditions. Contact us for a current copy of our Polymer pricing.

Contact Us!

Germain's Seed Technology
8333 Swanston Lane
Gilroy, California 95020

T: (408) 848 8120
E: nasales@germain's.com

