



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

May 30, 2019

Jennifer Lilly
Product Registration Manager – Biologicals
BASF Corporation
26 Davis Drive
P.O. Box 13528
Research Triangle Park, NC 27709-3528

Subject: Pesticide Registration Improvement Act (PRIA) Labeling and Formulation Amendment – Add Two-Year Expiration Language to the Labeling; Make Other Adjustments to the Labeling; and Make Adjustments to the Labeling, Basic Confidential Statement of Formula (CSF) and Alternate #1 CSF Requested by the EPA (e.g., Update Some of the Ingredient Percentages on the Labeling)
Response to the Storage Stability and Corrosion Characteristics Term of Registration
Product Name: Cartissa G
EPA Registration Number: 71840-19
Application Date: December 5, 2018
OPP Decision Number: 547289

Dear Ms. Lilly:

The amended labeling and Confidential Statements of Formula (CSFs) referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, are acceptable.

This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

Please note that the record for this product currently contains the following acceptable CSFs:

- Basic CSF dated 05/16/2019
- Alternate CSF #1 dated 05/16/2019

Any CSFs other than those listed above are superseded/no longer valid.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this

product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 § CFR 152.3.

Should you wish to add/retain a reference to your company’s website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the U.S. Environmental Protection Agency (EPA). If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 registration, the website will be referred to the EPA’s Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

Additionally, in a memorandum dated April 23, 2019 (see one of the enclosures), the EPA rated submitted storage stability data (MRID No. 507392-01) as acceptable. Thus, you have partially fulfilled term #2 of the November 14, 2016, Cartissa G Registration Notice. The corrosion characteristics portion of the aforementioned term remains outstanding.

If you have any questions, please contact Daniel Schoeff by phone at (703) 347-0143 or via email at schoeff.daniel@epa.gov.

Sincerely,



Jeannine Kausch, Product Manager 92
Microbial Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs

Enclosures



We create chemistry

Group 44 Fungicide

Text in square brackets (e.g., [*Not registered for use in California.]) is optional label language.

Cartissa™ G

Biofungicide

{Alternate Brand Names: Cartissa™ G Cereals, Cartissa™ Soybean, Cartissa™ Soybean Red, Cartissa™ G Soybean, Cartissa™ G Liquid Biostacked®, PPST 2030 G Biofungicide, PA 2030 Red Biofungicide}

For commercial use

Seed treatment for disease suppression in selected crops

Active Ingredients:

Bacillus amyloliquefaciens strain MBI 600* 0.090%

Bacillus pumilus strain BU F-33* 0.099%

Other Ingredients: 99.811%

Total: 100.000%

*Contains a minimum of 5.0 x 10⁹ colony forming units of each strain per mL of product.

EPA Reg. No. 71840-19

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN

CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, and Conditions of Sale and Warranty.**

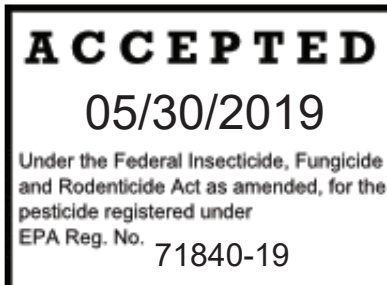
You may contact **BASF Corporation** for emergency medical treatment information at **1-800-832-HELP (4357).**

Net Contents:

Batch Code: Located on physical container

Not for sale or use after 2 years from the manufacture date stamped on the container.

BASF Corporation
26 Davis Drive, Research Triangle Park, NC 27709



First Aid	
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> • Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes. • Call a poison control center or doctor for treatment or advice.
Hotline Number	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information at 1-800-832-HELP (4357).	

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof or nitrile gloves
- Shoes plus socks
- Protective eyewear

Mixers/loaders and applicators not using enclosed systems must wear a NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

{Environmental hazards statements for the following for container sizes less than 5 gallons.}

For terrestrial uses: **DO NOT** apply directly to water, or to areas where surface water is present or to intertidal areas

below the mean high-water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

{Environmental hazards statements for the following for containers equal to or greater than 5 gallons.}

DO NOT discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. **DO NOT** discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

Pesticide Storage

Ensure container closures are tight. Store in a cool, dry place.

Pesticide Disposal

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

Container Handling

{For containers with capacities less than or equal to 5 gallons}

Nonrefillable container. DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment

or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. **DO NOT** burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

{For containers with capacities more than 5 gallons}

Nonrefillable container. DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact Ag Container Recycling Council at 877-952-2272 or www.acrecycle.org. Alternatively, puncture and dispose of in a sanitary landfill or by incineration. **DO NOT** burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

{For bulk/mini-bulk containers}

Refillable Container: Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure 2 more times.

When container is empty, replace the cap and seal all openings that opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

In Case of Emergency

In case of large-scale spill of this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Product Information

Cartissa™ G is an all-in-one product that includes:

- Biofungicide active ingredient, *Bacillus amyloliquefaciens* strain MBI 600, that inhibits seedling and root pathogens, such as *Fusarium spp.*, *Rhizoctonia spp.*, and *Pythium spp.*
- Biofungicide active ingredient, *Bacillus pumilus* strain BU F-33, that elicits systemic changes in the plant that activate the plant's own defense system against pathogens.
- Improved seed flow through planting and seed handling equipment for better seed drop accuracy with more precise and consistent seed placement.
- Reduced dust-off which means improved retention of active chemicals and biological products on the seed.
- EPA-approved colorants to color pesticide treated seeds as required under 40 CFR 153.155 and provide distinctive color and high quality, uniform visual appearance.

Bacillus amyloliquefaciens strain MBI 600 initially colonizes germinating seeds. The same bacteria then colonize the developing root systems of plants and suppress disease organisms that attack such root systems (e.g., *Fusarium spp.*, *Rhizoctonia spp.*, and, under some conditions, *Pythium spp.*). As root systems develop, the bacteria grow with the roots, extending the protection throughout the growing season. Because of this biological protection, vigorous root systems are established by plants, which often results in more uniform stands, overall improved plant growth and greater yields.

A second line of defense is realized by the activity of the other microbial active ingredient in *Bacillus pumilus* strain BU F-33. Like *B. amyloliquefaciens* strain MBI 600, the microbe colonizes germinating seeds and subsequently the developing root systems of plants. *B. pumilus* strain BU F-33 acts to stimulate the plant's own defense system against certain pests and pathogens.

Both active ingredients in **Cartissa G** increase root nodulation by nitrogen-fixing bacteria when applied to legume seeds. This increase in nodulation is a result of a healthier root system allowing formation of more sites for nitrogen-fixing nodules.

Cartissa G can be applied with other registered fungicide seed treatment products to provide additional modes of action against early season seedling diseases.

Label statement required by the State of Oregon

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.html>

Application Instructions

Cartissa G is only for use in commercial seed treatment facilities. **DO NOT** use in hopper box, planter box, slurry box, or other on-farm seed treatment applications.

DO NOT use treated seed for food or feed purposes or process for oil.

The Federal Seed Act requires that bags containing seed treated with this product shall be labeled with the following information: "This seed has been treated with *Bacillus amyloliquefaciens* strain MBI 600 and *Bacillus pumilus* strain BU F-33. **DO NOT** use for food, feed or oil purposes. Excess treated seed may be used for ethanol production only if by-products are not used for livestock feed and no measurable residues of pesticide remain in ethanol by-products that are used in agronomic practice.'

Mixing Instructions: Apply **Cartissa G** as a water-based slurry alone or with other seed treatment products (fungicides, insecticides, nematicides, fertilizers, and rhizobial inoculants). **DO NOT** mix **Cartissa G** with any copper-based products. Additionally, rhizobial inoculant products, such as **PPST 120+** and **Vault® NP**, can be added to the tank mix.

Prior to mixing, determine physical compatibility by mixing proportional quantities of the products in water. **DO NOT** mix **Cartissa G** with any other seed treatment

product that bears a label prohibition against such mixing. When tank mixing **Cartissa G** with any other seed treatment product, observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

ATTENTION: If rhizobial inoculants are to be used in the tank mix with other seed treatments (fungicides, insecticides, nematicides, and fertilizers), make sure that they are compatible (not harmful) to the *Rhizobia*. Likewise, use only cool, chlorine-free water in the tank mix. If one or more treatments are not compatible (harmful), mix those products in, and apply them from, a separate mix tank.

To mix, first add the other seed treatment product(s) and/or the rhizobial inoculant product(s) to the mix tank with approximately ½ of the required water. Slowly add **Cartissa G** to the slurry until a uniform suspension is obtained. Add the remainder of the water while maintaining constant agitation. **DO NOT** store mixed slurries for longer than 24 hours.

Some ingredients in **Cartissa G** may not completely solubilize; therefore, it is important to maintain a uniform suspension by continuously agitating the solution throughout the application process. **DO NOT** exceed label application dosage rates.

Because smaller seed has a greater surface area to volume ratio than larger seed, the average size of the seed being treated influences the application rate. For each crop listed in the **Crop Specific Directions** table, apply **Cartissa G** at rates from the higher end of the specified application rate range when treating smaller seed. Additionally, use the higher end of the specified application range when treated seed is to be planted in fields that historically experience severe disease pressure.

Crop Specific Directions

Crop	Target Diseases	Cartissa™ G Use Rate per Application
Alfalfa[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	4.0 – 30.0 fl oz per 100 lbs of seed 119 – 888 mL per 45.4 kg of seed
Bulb vegetables[*] Chive, fresh leaves Chive, Chinese, fresh leaves Daylily, bulb Elegans hosta Fritillaria, bulb Fritillaria, leaves Garlic, bulb Garlic, great headed, bulb Garlic, Serpent, bulb Kurrat Lady's leek Leek Leek, wild Lily, bulb Onion, Beltsville bunching Onion, bulb Onion, Chinese, bulb Onion, fresh Onion, green Onion, macrostem Onion, pearl Onion, potato, bulb Onion, tree, tops Onion, Welsh, tops Shallot, bulb Shallot, fresh leaves	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	5.0 – 30.0 fl oz per 100 lbs of seed 148 – 888 mL per 45.4 kg of seed
Barley[*], Oats[*], Rye[*], Triticale[*], and Wheat[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	2.0 – 10.0 fl oz per 100 lbs of seed 60 – 296 mL per 45.4 kg of seed
Corn, all types[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	8.0 – 32.0 fl oz per 100 lbs of seed (at 1,600 seeds per pound) 236 – 949 mL per 45.4 kg of seed 1.793 – 7.592 mg per seed 4.0 – 16.0 fl oz per 80,000 seeds
Cotton[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	2.0 – 10.0 fl oz per 100 lbs of delinted seed 60 – 296 mL per 45.4 kg of delinted seed

OPTIONAL TEXT: [*Not registered for use in California.]

Crop Specific Directions (continued)

Crop	Target Diseases	Cartissa™ G Use Rate per Application
<p>Cucurbit vegetables[*]</p> <p>Chayote (fruit) Chinese waxgourd Citron melon Cucumber Gherkin Pumpkin Watermelon</p> <p>Edible gourd Hyotan Cucuzza Chinese okra</p> <p>Momordica spp. Balsam apple Balsam pear Bitter melon Chinese cucumber</p> <p>Muskmelon Cantaloupe Casaba Crenshaw melon Golden pershaw melon Honeydew melon Honey balls Mango melon Persian melon Pineapple melon Santa Claus melon Snake melon</p> <p>Summer squash Crookneck squash Scallop squash Straightneck squash Vegetable marrow Zucchini</p> <p>Winter squash Butternut squash Calabaza Hubbard squash Acorn squash Spaghetti squash</p>	<p><i>Fusarium spp.</i></p> <p><i>Rhizoctonia spp.</i></p> <p><i>Pythium spp.</i></p>	<p>2.0 – 8.0 fl oz per 100 lbs of seed 60 – 237 mL per 45.4 kg of seed</p>
<p>Fruiting vegetables[*]</p> <p>Eggplant Groundcherry Pepino Pepper (all varieties) Tomatillo Tomato</p>	<p><i>Fusarium spp.</i></p> <p><i>Rhizoctonia spp.</i></p> <p><i>Pythium spp.</i></p>	<p>5.0 – 30.0 fl oz per 100 lbs of seed 148 – 888 mL per 45.4 kg of seed</p>
<p>Green Beans[*], Snap Beans[*], Lima Beans[*], Kidney Beans[*], Navy Beans[*], Pinto Beans[*], Wax Beans[*], Pole Beans[*], Garden Peas[*], Field Beans[*]</p>	<p><i>Fusarium spp.</i></p> <p><i>Rhizoctonia spp.</i></p> <p><i>Pythium spp.</i></p>	<p>0.7 – 6.0 fl oz per 100 lbs of seed 20 – 178 mL per 45.4 kg of seed</p>

OPTIONAL TEXT: [*Not registered for use in California.]

Crop Specific Directions (continued)

Crop	Target Diseases	Cartissa™ G Use Rate per Application
Rapeseed[*], Canola[*], and Sunflower[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	4.0 – 30.0 fl oz per 100 lbs of seed 119 – 888 mL per 45.4 kg of seed
Peanuts[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	1.0 – 8.0 fl oz per 100 lbs of seed 30 – 178 mL per 45.4 kg of seed
Peas[*], Lentils[*], Dry Beans[*], and Chickpeas[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	0.7 – 4.2 fl oz per 100 lbs of seed 20 – 123 mL per 45.4 kg of seed
Rice[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	5.0 – 30.0 fl oz per 100 lbs of seed 148 – 888 mL per 45.4 kg of seed
Root and tuber vegetables[*] Potato Arracacha Arrowroot Artichoke, Chinese Artichoke, Jerusalem Carrot Cassava (bitter and sweet) Chayote (root) Chufa Dasheen (taro) Canna, edible Ginger Leren Sweet potato Tanier Turmeric Yam bean Yam, true	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	1.0 – 30.0 fl oz per 100 lbs of seed 30 – 888 mL per 45.4 kg of seed
Sorghum, all types[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	0.7 – 6.0 fl oz per 100 lbs of seed 20 – 178 mL per 45.4 kg of seed
Soybeans[*]	<i>Fusarium spp.</i> <i>Rhizoctonia spp.</i> <i>Pythium spp.</i>	2.0 – 8.0 fl oz per 100 lbs of seed (at 2,800 seeds per pound) 59 – 236 mL per 45.4 kg of seed 0.256 – 1.084 mg per seed 1.0 – 4.0 fl oz per 140,000 seeds

OPTIONAL TEXT: [*Not registered for use in California.]

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as the presence of other or untested or unapproved materials, seed of low quality or low vigor or low germination, use of the product in a manner inconsistent with its labeling, misapplication of this product, or weather conditions at planting or environmental conditions during seed storage, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THIS PRODUCT.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** that may be varied only by agreement in writing signed by a duly authorized representative of BASF.

Biostacked and Vault are registered trademarks of BASF.

Cartissa is a trademark of BASF.

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071840-00019.20180515b.NVA 2018-04-536-0040

Replaces: NVA 2017-04-536-0171

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We create chemistry