

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: Double Nickel LC
Product Type: Liquid Concentrate
EPA Registration No. 70051-107
Active Ingredient: *Bacillus amyloliquefaciens* strain D747
CAS No.: 68038-60-8

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Bio-fungicide
Uses advised against: Any use not listed on the label

1.3. Details of the supplier of the safety data sheet

Name: Certis U.S.A., LLC
Address: 9145 Guilford Road, Suite 175
Columbia, Maryland 21046
U.S.A.
Phone Number: +01 (800) 255-3924
Website: <http://www.certisusa.com>

1.4. Emergency telephone number

Emergency number: +1 800 255-3924

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Hazard Classification: Not classified as hazardous by OSHA
EPA Signal Word: Caution see section 15
Hazard Statements: None
Pictogram: None
Precautionary Statements: Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with eyes, or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco and using the toilet.

2.2 Other Hazards: For Terrestrial Uses: Do not apply directly to water or to areas where surface water is present, or to intertidal areas below mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. Do not apply when weather conditions favor drift or runoff from treated areas.

SECTION 3: Composition/information on ingredients

3.1. Substances

Ingredient	Percentage	CAS#
<i>Bacillus amyloliquefaciens strain D747</i>	98.85	68038-60-8

SECTION 4: First aid measures

4.1. Description of first aid measures

Generic measures

Eye Contact: Immediately flush with water holding eye open for 15-20 minutes. Remove contact lenses after 5 minutes if present and continue rinsing eye. Seek medical attention if irritation persists.

Skin Contact: Remove contaminated clothing and wash affected area with plenty of soap and water. If irritation persists call poison control or doctor for treatment advice

Inhalation: Remove individual to fresh air. If person is not breathing call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth if possible. Call poison control center or doctor for further advice.

Have the product label with you when calling a poison control center or doctor.

4.2. Most important symptoms and effects, both acute and delayed

May cause an allergic reaction in some individuals

4.3. Indication of any immediate medical attention and special treatment needed

Note to Physicians: The active ingredient contained in this product has a high affinity for activated charcoal. In case of ingestion of large amounts, administrate 5 mg/kg activated charcoal suspension (50g/400mL water).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media: All extinguishing media

Unsuitable Extinguishing Media: None known

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products: None known

5.3. Advice for firefighters

Protection of Firefighters: None specified

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Use personal protections as indicated in Section 8.

For emergency responders: Use personal protection recommended in Section 8.

6.2. Environmental precautions

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local and national health and environmental regulations.

6.3. Methods and material for containment and cleaning up

Methods for Containment: Recover free product. Use absorbent material to minimize runoff of product or mixed product.

Methods for Clean-Up: Sweep up and place in a chemical container. Seal the container and handle in an approved manner. Do not allow wash water to contaminate water supplies. Dispose of in accordance with Federal State and local regulations for disposal of non-hazardous waste.

Other Information: None

6.4. Reference to other sections

See Section 8 for occupational exposure limits and risk management measures. Refer to Section 13 for disposal considerations..

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticides got 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.

7.2. Conditions for safe storage, including any incompatibilities

Store pesticide in a cool dry area that is inaccessible to children. Store in original containers only. Keep container closed when not in use.

7.3. Specific end use(s)

Wastes resulting from the use of this product maybe be disposed of on site or at an approved waste disposal facility.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OSHA Permissible Exposure Limits (PELs): Not determined

ACGIH Threshold Limit Values: Not determined

Other Exposure Limits: Not determined

8.2. Exposure controls

Engineering Controls: Use in well ventilated area

Personal Protective Equipment

Eye/Face Protection: None specified

Skin Protection Long sleeved shirt and long pants

Hand Protection: Waterproof gloves

Body Protection: Shoes plus socks

Respiratory Protection: Mixer loaders and applicators must wear a dust/mist respirator meeting NIOSH standards of at least N-95, R- 95, or P-95.

Thermal Hazards: None

General Hygiene Considerations: Repeated exposure to high concentrates of microbial proteins can cause allergic sensitization.
Wash clothing and PPE using manufacturer's instructions immediately after use and before reuse.

Environmental exposure controls: Do not apply directly to water or to areas where surface water is present or intertidal areas below high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. Do not apply when weather conditions favor drift or run off from treated areas.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance: Tan liquid
Odour: Yeast like
Odour Threshold: Not determined
pH: 4.0-5.0
Melting Point / Freezing Point: 32° F (0°C)
Initial Boiling Point: 212° F (100°C)
Boiling Range: Not available
Flash Point: Not available
Evaporation Rate: Not available
Flammability (solid, gas): Not available

Lower & Upper Flammability Limits:	Not available
Vapour Pressure:	Not available
Vapour Density:	Not available
Density:	8.5-8.6 lb./gallon
Solubility:	Not available
Partition Coefficient (n-octanol/water):	Not available
Auto-ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	4.0-16 cP
Explosive Properties:	None known
Oxidising Properties:	None known

9.2. Other information

Not available.

SECTION 10: Stability and reactivity

<u>10.1. Reactivity</u>	Stable
<u>10.2. Chemical stability</u>	Stable
<u>10.3. Possibility of hazardous reactions</u>	None known
<u>10.4. Conditions to avoid</u>	None known
<u>10.5. Incompatible materials</u>	None know
<u>10.6. Hazardous decomposition products</u>	None Known

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Toxicity

Toxicological information on the substance or mixture:

LD₅₀ (oral)	LD ₅₀ > 5000 mg/kg body weight rat, test results based on similar product containing the same active ingredient.
LD₅₀ (dermal)	LD ₅₀ > 5050 mg/kg body weight rat, test results based on similar product containing the same active ingredient.
LC₅₀ (inhalation)	LC ₅₀ > 2.18 mg/L, test results based on similar product containing the same active ingredient

Skin corrosion / irritation: Non-irritating, Toxicity Category IV

Eye irritation: No positive effects exhibited in any eyes after treatment Practically non-irritating, Toxicity Category IV

Respiratory or skin sensitization: No data available.

Other information on adverse health effects:

Carcinogenicity

NTP Listed: Not applicable.
IARC Listed: Not applicable.
OSHA: Not applicable.

11.2 Reference to other sections

See Section 4 for symptoms and acute and delayed effects.

SECTION 12: Ecological information

12.1. Toxicity

Test species	Test method	Test substance	LC ₅₀
Northern Bobwhite	Acute oral toxicity	<i>B. amyloliquefaciens</i> strain D747	LD ₅₀ > 2250 mg/kg body weight
<i>Oncorhynchus mykiss</i>	30 days	<i>B. amyloliquefaciens</i> strain D747	LC ₅₀ > 8.1 x 10 ¹⁰ CFU/L
<i>Daphnia magna</i>	21 days	<i>B. amyloliquefaciens</i> strain D747	EC ₅₀ > 2.3 x 10 ¹⁰ CFU/L
<i>Apis mellifera</i>	48 hour	<i>B. amyloliquefaciens</i> strain D747	LC ₅₀ > 1.0 x 10 ⁹ CFU/mL

12.2. Persistence and degradability

The active substance *B. amyloliquefaciens* D747 populations spreading to the environment during or after field application will rapidly decline to naturally occurring background levels.

12.3. Bioaccumulative potential

The active substance *B. amyloliquefaciens* D747 does not multiply and accumulate in animals and humans.

12.4. Mobility in soil

The active substance *B. amyloliquefaciens* D747 spores readily adsorb to the clay fractions in soils and show no evidence of leaching. Therefore the risk of ground water contamination is considered negligible.

12.5. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal Instructions: Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage: Store in a dry area inaccessible to children. Store in original containers only. Keep container closed when not in use.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of onsite or at an approved waste disposal facility.

Container Handling: Non-refillable container. Do not reuse or refill this container.

- *For containers equal to or less than 5 gallons*

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 contain 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, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

- *For containers greater than 5 gallons*

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.

SECTION 14: Transportation information

14.1. UN number

Not regulated.

14.2. UN proper shipping name

Not regulated.

14.3. Transport hazard class(es)

Not regulated.

14.4. Packing group

Not regulated.

14.5. Environmental hazards

Not regulated.

14.6. Special precautions for user

Not regulated.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not regulated.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EPA: This product is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticidal chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION, KEEP OUT OF REACH OF CHILDREN

Prolonged or frequently repeated skin contact may cause allergic reactions in some individual.

Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

OSHA:	N/A
TSCA Status:	Exempt
CERCLA Reportable Quantity:	N/A
SARA Title III:	
Section 302:	N/A
Section 311/312:	N/A
Section 313:	N/A
RCRA Status:	N/A

SECTION 16: Other information

Disclaimer:

To the best of our knowledge, the information contained herein is accurate. However, neither Certis USA nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

SDS Authoring Information:

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SDS Prepared by:	Certis U.S.A. L.L.C.