EPA REGISTRATION NUMBER 84610-2 Vol. 2 (Pages added after 5/15/15)

84610-2

Memorandum

Date: 6 / 23 / 16

To: PM 33, Regulatory Manager

From: Information Services Branch, ITRMD

Your receipt of this data submission is not an indication that MRIDs for the enclosed studies have been posted to OPPIN.

We expect that it will be approximately 5 days from the above date before the study-level data is available in OPPIN.

If you have any questions about this process, please contact Teresa Downs (305-5363).

This is a:
- ☒ fully accepted submission
- ☐ partially accepted submission
- ☐ rejected submission

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

June 23, 2016

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MR. WAYNE J. KRAUSE
POLY-TECHNICAL SOLUTIONS, LTD.
65 TORREY PINES CT.
NEWNAN, GA 30265

Report of Analysis for Compliance with PR Notice 11-03

Thank you for your submittal of 07-JUN-16. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 11-03. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.

Receipt for Section 3

S: 987372 Milestone Email:

Regulatory Type: Product Registration - Section 3

Application Type: Amendment

Company: 84610 POLY-TECHNICAL SOLUTIONS, LTD. V

Resubmission: Yes No

Fee For Service: Yes No

Billable: Yes No

Print Letter

Enter More Information

Tracking

Risk Manager: Antimicrobials Division, Risk Management Team 33

Product #: 84610-2 Product Name: NSPW-L30SS

Override#:

Me Too Section3: Me Too Product Name:

Application Date: 23-May-2016 OPP Rec'vd Date: 07-Jun-2016

Front End Date: 07-Jun-2016 Risk Manager Send Date: 07-Jun-2016

FFS Due Date: Negotiated Due Date:

OPP Target Date:

Receipt Content	Des
Study	

View/Edit

Fast Track: New Ingredient:

Receipt Description:

characterization of NSPW-L30SS

New Ingredient Request Date:

New Ingredient Received Date:

Form A: Signature Date: Form B: Signature Date:

49941900

TRANSMITTAL DOCUMENT

Name and Address of Submitter: Poly-Technical Solutions Ltd.
C/O Wayne Krause
65 Torrey Pines Ct.
Newnan, GA. 30265

Regulatory action in support of which this package is submitted:
Conditional Registration for NSPW-L30SS

EPA Reg. No. /File Symbol: N0. 84610-2

Alternative Test Material Names: Covalently bonded Silver-Silica Colloid in aqueous solution

Transmittal Date: May 23, 2016

Administrative Materials

1 Transmittal Document
Cover Letter

Volume No.	Citation	MRID No.
2	Characterization of NSPW-L30SS; Particle Sizing, Surface Area, Zeta Potential, Photo Correlation Spectroscopy (PCS), and X-Ray Photoemission Spectroscopy (XPS) Non-Guideline Study No. MVA11501, Steve P. Compton, PhD., 2016 Unpublished Study by Poly-Technical Solutions Ltd., 37 pages. 3 Copies	49941901

Company Official: Wayne Krause, President
Company Name: Poly-Technical Solutions Ltd.
Company Contact: Wayne Krause, (678)622-3177 , wkrause63@hotmail.com

Signature:

From: Greg Jones
To: Murasaki, Seiichi
Subject: Re: Note from Greg Jones-NanoSilva, LLC (NSPW-L30SS)
Date: Thursday, June 04, 2015 12:12:42 PM

Thank you

Sent from my iPhone

> On Jun 4, 2015, at 11:06 AM, Murasaki, Seiichi <Murasaki.Seiichi@epa.gov> wrote:
>
> Hello, Greg!
>
> Please refer to the guidance at the address/link below for reporting changes to company name or address:
> http://www2.epa.gov/pesticide-registration/pesticide-registration-manual-how-report-changes-company-name-or-address
>
> Thanks!
> Seiichi
>
> Seiichi Murasaki
> Regulatory Management Branch I
> Antimicrobials Division
> Office of Pesticide Programs
> Environmental Protection Agency
> 703-347-0163
>
> -----Original Message-----
> From: Greg jones [mailto:gjones21@sbcglobal.net]
> Sent: Thursday, June 04, 2015 11:50 AM
> To: Murasaki, Seiichi
> Cc: Wayne Krause; Jerry Gaskins
> Subject: Note from Greg Jones-NanoSilva, LLC (NSPW-L30SS)
>
>
> Seiichi,
>
> In conjunction with NanoSiva, LLC, and its recent EPA antimicrobial approved registration for (NSPW-L30SS), Wayne Krause has asked me to contact you regarding application for doing a company name change.
>
> From a search I did today via the EPA public web site, I found the attached EPA document form to use for an EPA registrant when submitting a business name change. At your convenance, would you please check the attached document for verification to see if in fact it is the correct form.
>
> If the file attached is not correct, please forward to me the right EPA document I will need for completing this task.
>
> Thank you,
>
> Greg Jones
>
> http://www2.epa.gov/sites/production/files/2013-07/documents/8570-1.pdf
>
>

From: Wayne
To: Murasaki, Seiichi
Subject: RE: Guidance
Date: Friday, August 07, 2015 4:52:35 PM

Thanks for the information. I really need impute regarding the physiological conditions for the Plastic Leaching test.

As it stands, I plan to submit the protocols by the 15th as requested.

Also, your P.S. on NRDC'S is not a surprise. Is there anything we need to do?

Sent via the Samsung Galaxy Note® 3, an AT&T 4G LTE smartphone

-------- Original message --------
From: "Murasaki, Seiichi" <Murasaki.Seiichi@epa.gov>
Date: 08/05/2015 3:44 PM (GMT-05:00)
To: Wayne <wkrause63@hotmail.com>
Subject: RE: Guidance

Wayne,

The particle size guidance starts on around page four of the letter I sent in my 7/20/2015 4:41 PM email (also attached to this email).

I received the following from the science team regarding the surface area and dissolution kinetics:

> The agency does not have standard protocols for this material, and this is not a material for which the agency has experience in obtaining the required information given the amorphous nature of the complex. Therefore while the agency is providing recommendations based on methods used in the past, if the recommended protocols are not appropriate for this material due to its construct and properties, it is the responsibility of the registrant to identify the current appropriate scientific method given the state of the science or provide a waiver for the data documenting why such information is unobtainable.
>
> Surface Area:
> The agency data requirement is for determination of the surface area of the complex (the silica + thiosulfate bonded silver nanoparticle components each) and for the silver nanoparticles themselves. For the surface area of the overall complex, the method the Agency would currently recommend is the BET (Bruauer, Emmett and Teller) method modified as necessary for handling amorphous silica (ASTM B922–10; Zhuravlev, 2000). If the complex has any porosity which would add to the surface area this method should be able to capture this. To obtain the surface area component of the bonded nanosilver a different method is required. The Agency has seen the oxygen pulse chemisorption method used with silica/silver complexes to obtain the surface area of the silver nanoparticles. This method would require assumptions that the amorphous silica particles will not interact with oxygen, that the surface area of the silver nanoparticles bonded on the silica complex will interact with oxygen, that the adsorption of oxygen is independent of the structure of the silica/thiosulfate structure, and that oxygen will interact with silver in the ratio of 2 Ag: 1 O. If these are the methods the registrant decides to go with the protocol should provide adequate documentation of why these assumptions should hold for NSPW specifically (e.g., would any bonded or unbonded thiosulfate moieties interact with the

oxygen?). Additionally, the BET method is for dry material so the method used to dry the amorphous silica complex and its effect on size and surface area estimates discussed in the protocol. The protocol should also document the number of measurements that will be made and the certainty basis and statistical basis for the determination of the number of measurements.

For the silver nanoparticles themselves (i.e., not in the presence of amorphous silica), the BET method is appropriate. The protocol should include a description of how silver nanoparticles for the BET analysis are obtained separately from the amorphous silica (i.e., can be obtained during the manufacturing process at point) and how representative they are of the silver nanoparticles bonded to the amorphous silica particle. The protocol should also document the number of measurements that will be made and the certainty basis and statistical basis for the determination of the number of measurements.

Other documents to consult in preparing protocol:

- NIST. 2006. *Porosity and Specific Surface Area Measurements for Solid Materials.* Special Publication 960-17. Prepared by P. Klobes, K. Meyer and R. Munro.
- ASTM B922—10. 2015. *Standard Test Method for Metal Powder Specific Surface Area by Physical Adsorption.*
- Zhuravlev, L. 2000. The surface chemistry of amorphous silica. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 173:1-38.

Dissolution Kinetics

This dissolution kinetics study is required to assess the persistence of NSPW-L30SS in the environment and the extent of nanoparticle release; the study is required to provide information on both the short-term and long-term release and characterization of NSPW-L30SS released to the environment. RQs for assumed nanosilver release were within the stated trigger for effects to aquatic organisms and this study will help reduce uncertainty related to the potential environmental exposures from nanosilver derived from NSPW-L30SS. Additionally, the study can serve a dual purpose to aid in designing the protocol for the required aquatic organism testing and for understanding the state of the complex, nanosilver release, and characterization of silver products during the aquatic organism tests. Data is therefore required for distilled water or reagent water @ 20 ^{0}C, laundry test water used in the leaching study, test water to be used for aquatic tests @ test temperatures (e.g., acute daphnid), seawater (artificial) @ aquatic organism test temperature. The effect of environmental relevant pH conditions should also be considered. Goals of the study are to determine:

1. The rate of silver released as a function of time from NSPW-L30SS suspended in these aqueous solutions over a period of up to 2 months (the study design can set criteria which would trigger shorter time frames [e.g., all nanosilver particles dissolve prior to 2 months then testing can end at that time].
2. To characterize and quantify the form of silver released (e.g., ionic silver, nanosilver, soluble silver, aggregated silver particles) from suspended NSPW-L30SS and the amount that stays bound to NSPW-L30SS.
3. A kinetic model (e.g., first order model) that best fits the change in silver concentration with time should be proposed.

Literature that can be consulted to help design the study include:

- 835.7840 (flask method)/ 835.7860
- Liu, J.; Hurt, R. H. 2010. Ion Release Kinetics and Particle Persistence in Aqueous Nano-Silver Colloids. *Environmental Science & Technology* 44 (6), 2169-2175.
- Lee et al., 2012. *Environ. Toxicol. Chem.* 31:155

I am still waiting on more guidance regarding the particle stability and leaching studies but will let you

know as I get more information.

Seiichi

P.S.
From http://www.nanotech-now.com/columns/?article=993:

> On July 27, 2015, two petitions for review of the U.S. Environmental Protection Agency's (EPA) second conditional registration of a nanosilver pesticide product were filed in the U.S. Court of Appeals for the Ninth Circuit. The Natural Resources Defense Council (NRDC) filed a petition (Case Number 15-72308), as well as the Center for Food Safety (CFS) and International Center for Technology Assessment (ICTA) (Case Number 15-72312). Both suits ask the court to set aside EPA's final order granting a conditional registration for a nanosilver-containing antimicrobial pesticide product named "NSPW-L30SS," or "Nanosilva."

From: Wayne [mailto:wkrause63@hotmail.com]
Sent: Wednesday, August 05, 2015 10:02 AM
To: Murasaki, Seiichi
Subject: Guidance

Any guidance available yet on the following conditional testing list below?

Particulate Stability
Dissolution Kinetics
Plastic Leaching Study

Also, you sent me an email with some guidance on Particle Sizing but did not include the attachment you referenced.

Regards,

Wayne J. Krause
President, Poly-Technical Solutions LTD

From: Murasaki, Seiichi
To: Wayne
Subject: RE: Update
Date: Wednesday, August 19, 2015 10:26:00 AM
Attachments: image001.png

Wayne,

I am forwarding a little more information regarding the guidance in the previous email:

For Particle Stability and Dissolution Kinetics you must test the particles present in the solution- the whole NSPW-L30SS complex. They may refer to the Decision Document Appendix B, and in particular Figure B1 and Tables B1/B2 (where they will see that both tests fall under Tier I and require the whole complex to be tested).

The solution (e.g. concentration of NSPW-L30SS) should be the same or similar to the aquatic effect studies (i.e., acute Daphnid). It is at this concentration that detection, dissolution kinetics, and stability must be explained.

When determining the proper concentration to test in an aqueous solution consider the most sensitive ecotox value and the trigger factor used in the ecological risk assessment. The LC_{50} for daphnia used in a previous assessment was 1.8 µg/L total silver (0.5 µg/L dissolved silver); you may want to use concentrations in this range, however if you suspect that NSPW-L30SS is more toxic to D. manga, than the nanosilver used in the risk assessment should take this into consideration (i.e. lower the concentration). Keep in mind that a concentration-response curve should include two concentrations with partial kills below the LC_{50}, and the factor should be 200 times below the LC_{50}.

Thanks!
Seiichi

From: Murasaki, Seiichi
Sent: Monday, August 17, 2015 2:26 PM
To: 'Wayne'
Subject: RE: Update

Wayne,

1) Test Material for Particulate Stability* = particles present in the solution (NSPW-L30SS complex)
2) Test Material for Dissolution Kinetics = particles present in the solution (NSPW-L30SS complex)

*Note: As the instructions for the enforceable schedule indicate, mechanical stress (shear) should also be evaluated as part of this study. A component of the study would be how frangible the complex is from plastic - especially plastic lumber (e.g., foot traffic and other wear and tear).

Table 1B - Summary of Tier I Required Data for Nanosilva

OSCPP Data Requirement (Note 1) Guideline Number: Study Title	Reason for Study	Test Material	Comments
Non-Guideline: Surface Area Determination	Required to characterize product		Determine both the surface area of the silica core particle and the nanosilver particles
Non-Guideline: Particulate Stability	Required to assess stability of Nanosilva	Nanosilva	Nanosilva LLC claims that Nanosilva is a stable complex that does not release nanosilver. This test should be designed to demonstrate Nanosilva stability to mechanical stress (normal and shear) and common reactants and solvents. EPA will use this information to evaluate Nanosilva LLC claims of Nanosilva stability.

I will let you know when I hear anything more about leaching guidance.
Seiichi

Seiichi Murasaki
Regulatory Management Branch I
Antimicrobials Division
Office of Pesticide Programs
Environmental Protection Agency
703-347-0163

From: Wayne [mailto:wkrause63@hotmail.com]
Sent: Monday, August 17, 2015 1:44 PM
To: Murasaki, Seiichi
Subject: Update

Anything addition from the Science Group regarding my email request for clarification of test substance for Particle Stability and Dissolution Kinetics?

Also physiological fluids recommendations for Leaching Study?

Regards,

Wayne

Sent via the Samsung Galaxy Note® 3, an AT&T 4G LTE smartphone

From: Murasaki, Seiichi
To: Wayne
Subject: Additional leaching study guidance
Date: Monday, August 24, 2015 10:25:00 AM

Wayne,

Please see below for additional leaching study guidance:

A leaching study in plastics is required for NanoSilva to confirm the results of the previously submitted plastics leaching study which had the following areas of uncertainty that need to be addressed:

- The maximum application rate tested (20 ppm silver) was lower than the maximum application rate on the label (30 ppm silver). The new study should be based on coupons that have at least 30 ppm silver.
- The amount of silver in the coupons was initially an area of uncertainty because the ashing digestion method caused a loss of silver. This uncertainty was later resolved by using a nondestructive method (NAA) to analyze the coupons. It is recommended that that NAA be used to analyze the coupons for the new study. Alternatively a more effective digestion method such as microwave digestion could be used if NAA is not feasible.
- The limit of detection (LOD) and the limit of quantification (LOQ) were not clearly defined and had to be estimated based on published methods. Validation data should be included to support these values. This validation data should include recovery results of sampling media fortified with silver at levels near the LOQ. If the other parameters of the study (such as the size of the coupon and amount of leaching fluid) are the same as used previously, an LOQ of 5 ug/liter will be sufficient to confirm the estimated leaching rate of 0.028% for a coupon containing 30 mg/kg silver that was used in the decision document.
- The previous study used a variety of fluids and temperatures that were based on FDA protocols for food migration studies. Since one of the purposes of the new study is to assess exposures to children mouthing plastic items, simulated saliva at the physiological temperature of 98.6 F (37 C) should be used for the new study.
- The other purpose of the study is to assess environmental exposures to nanosilver that leaches out of plastic wood. This purpose can be addressed by lengthening the exposure period to 14 days. In addition, if the study is run with an LOQ of 5 ug/liter as discussed above, and no residues are detected, then the resultant leaching rate of 0.028% will be more than 100 times lower than the leaching rate of 4 percent that would provide confidence of no unreasonable adverse ecological effects of concern.

Thanks!
Seiichi

Seiichi Murasaki
Regulatory Management Branch I
Antimicrobials Division
Office of Pesticide Programs
Environmental Protection Agency
703-347-0163

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Antimicrobials Division (7510P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

NOTICE OF PESTICIDE:
_X_ Registration
__ Reregistration
(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
84610-2	5/15/15

Term of Issuance:
Conditional

Name of Pesticide Product:
NSPW-L30SS

Name and Address of Registrant (include ZIP Code):

Wayne Krause
Nanosilva, LLC
65 Torry Pines Ct.
Newnan, GA 30265

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Antimicrobials Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(C). You must comply with the following conditions:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product under FIFRA when the Agency requires all registrants of products contained in relevant cases to submit such data.

Signature of Approving Official:

for

John Hebert, Chief
Regulatory Management Branch I, Antimicrobials Division
(7510P)

Date:
5/15/15

EPA Form 8570-6

2. Be aware that proposed data requirements have been identified in a Work Plan. For more information on these proposed data requirements, you may contact the Reevaluation Team Leader (Team 36): http://www2.epa.gov/pesticide-contacts/contacts-office-pesticide-programs-antimicrobial-division
3. You are required to submit to the Agency protocols and data, based on a tiered approach, deadlines for submission of the protocols and data requirements are outlined in the enclosed Data Requirements and Schedule Table. Your failure to provide these data in a timely or adequate manner may result in initiation of a cancellation action against your registration.
4. Make the following label changes before you release the product for shipment:
    - Revise the EPA Registration Number to read, "EPA Reg. No. 84610-2."
5. Submit one copy of the final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements 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 Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 05/06/2015

If you have any questions, please contact Seiichi Murasaki at murasaki.seiichi@epa.gov.

Enclosures:
Data Requirements and Schedule Table
Stamped Label

Data Requirements and Schedule

NSPW-L30SS and plastics treated with NSPW-L30SS will be the test material during Tier I (Phases 1 – 4) studies. The test material for Tier II studies (Phases 5 – 9) will depend on the results of the Tier I leaching and dissolution studies (nanosilver and /or NSPW-L30SS released).

Guideline		Protocols*	Results†
	Phase 1 – NSPW-L30SS Characterization	**3**	**12**
NGL	Particle Size Distribution		
NGL	Surface Area		
	Phase 2 – Product Testing	**3**	**12**
NGL	Particulate Stability		
	Phase 3 – Release Characteristics/Exposure	**3**	**15**
NGL	Dissolution Kinetics		
NGL	Leaching Test of Plastic		
	Phase 4 – Health Effects	**6**	**32**
870.3250	Modified 90-Day Inhalation		
870.3550	Modified Reproduction/Developmental Toxicity Screening Test		
	Phase 5 – Ecological Effects	**6**	**18**
850.1010	Aquatic Invertebrate Acute Toxicity, Freshwater Daphnids		
	Phase 6 – Characterization	**18**	**24**
NGL	Plasmon Resonance		
NGL	Particle Size Distribution		
NGL	Surface Area		
830.7840 / 830.7860	Solubility		
NGL	Zeta-potential		
	Phase 7 - Health Effects	**18**	**45**
NGL	peri- and post-natal exposure to NSPW-L30SS		
870.7600	Dermal Penetration		
	Phase 8 – Ecological Effects	**18**	**45**
850.1850	Modified Aquatic Food Chain Transfer		
850.4100	Terrestrial Plant Toxicity, Seedling Emergence		
850.4400	Aquatic Plant Toxicity, Tier II (Definitive) Test		
850.4500	Algal Toxicity, Tier II (Definitive) Test		
850.4550	Cyanobacteria Toxicity, Tier II (Definitive) Test		
NGL	Chronic Effects of Sediment-Associated Contaminants on *Chironomus dilutes*		
NGL	Chronic Effects of Sediment-Associated Contaminants on *Hyalella azteca*		
NGL	Chronic Effects of Sediment-Associated Contaminants on *Leptocheirus plumulosus*		
850.1075	Acute Toxicity Test with Freshwater and Marine Fish		

Guideline		Protocols*	Results†
850.1300	Daphnid Chronic Toxicity Test		
850.1400	Early-Life Stage Toxicity Test for Freshwater, Estuarine, and Marine Fish		
	Phase 9 – Environmental Fate	**18**	**45**
NGL	Rate of Deposition/Aggregation		
850.1100	Activated Sludge Sorption Isotherm		
835.1230	Adsorption/Desorption (Soil/Sediment) modified to include leaching component		
850.3300 or OECD 209	Activated Sludge, Respiration Inhibition Test for Sparingly Soluble Chemicals		

*Number of months after conditional registration is issued to prepare and submit protocols.
†Number of months after conditional registration is issued to perform study and submit results.
NGL = Non-Guideline

NSPW-L30SS

NSPW-L30SS is a silver-silica based antimicrobial additive for use in the protection of polymeric intermediates and subsequent treatment of polymer and polymer-based products.

ACTIVE INGREDIENT:

Silver*.....1.00%

OTHER INGREDIENTS:.....99.00%

TOTAL.....100.00%

*includes particles in the size range between 1 to 100 nm.

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS

Causes Moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

WORKER PROTECTION

Closed system loading of NSPW-L30SS containing suspension.

NIOSH certified full-face respirators with P100 or equivalent filter cartridges immediately available for use in an emergency.

Gloves which are chemically resistant to all of the components of the NSPW-L30SS liquid suspension.

A long-sleeve shirt, long pants, shoes plus socks.

FIRST AID

IF SWALLOWED: Rinse mouth and throat thoroughly with tap water, seek medical attention.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, the continue rinsing.

IF ON SKIN: Wash skin with soap and water, remove contaminated clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates, and birds. 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.

EPA Registration No: 84610-E EPA Establishment No: 084610-FL-001

Net Contents: 1 Liter (33.8 US oz.)

EMERGENCY CONTACT INFORMATION

Have the product label or container with you when calling a poison control center or doctor, or going for treatment. For emergency information concerning this product, call the National Pesticides Information Center (NPIC) at 1-800-858-7378 seven days a week, 6:30 am to 4:30 pm Pacific time. During all other hours, call the Poison Control Center at 1-800-222-1222.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Do not store in areas accessible to children. Keep container tightly closed. Keep container in cool area and away from direct sunlight.

Pesticide Disposal: Waste disposal must be in accordance with federal, state, and local environmental control regulations.

Container Handling: Nonrefillable Container. Do not reuse or refill this container. Dispose of container in sanitary landfill or by incineration, if allowable by state and local authorities.

WARRANTY STATEMENT

NanoSilva, LLC. warrants that this product conforms to the chemical description on the label. To the extent consistent with applicable law, NanoSilva, LLC., makes no warranties of merchantability or fitness for a particular use or any other expressed or implied warranty except as so stated above.

ACCEPTED

May 15, 2015

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 84610-2

DATE MANUFACTURED:
BATCH NUMBER:
LOT #:
EXPIRATION DATE:

DIRECTIONS FOR USE

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

NSPW-L30SS is an antimicrobial additive engineered for use in the manufacture of polymer or plastic based intermediates that may be integrated into products listed in the technical bulletin for NSPW-L30SS antimicrobial during the manufacturing process to impart antimicrobial activity to the manufactured product.

NSPW-L30SS may only be incorporated into linear low-density polyethylene (LLDPE) and polyethylene terephthalate based polymeric intermediates.

This product is not for use in applications involving food contact, food packaging, or drinking water.

****See Technical Bulletin for detailed use information****

NSPW-L30SS suppresses the growth of bacteria, fungus, mold and mildew which can cause unpleasant odors, discoloration, staining and deterioration of untreated manufactured products.

Finished products containing NSPW-L30SS antimicrobials can not make public health claims relating to antimicrobial activity without EPA pesticide registration. When used in treated articles, this product does not protect users of any such treated article or others against food borne or disease causing bacteria, viruses or other disease causing organisms.

APPLICATION RATE

The maximum application rate for industrial polymeric intermediates is 2% by weight of NSPW-L30SS. This dosage applies only to intermediate manufacturing/industrial uses. It does not apply to active ingredient concentrations in consumer finished products.

The maximum application rate for treatment of finished product is 15.0% by weight of Polymeric Intermediates containing 2% NSPW-L30SS.

The maximum silver content for finished treated products is 0.003% or 30 ppm.

NSPW-L30SS

Antimicrobial Additive
EPA Reg. 84610-E

Technical Bulletin
Refer to the container label for more information.

NSPW-L30SS is a silver-silica based antimicrobial additive engineered through proprietary developments in nanotechnology for use in the protection of polymer and polymer-based products to include synthetic textiles. NSPW-L30SS may only be incorporated into linear low-density polyethylene (LLDPE) and polyethylene terephthalate based polymeric intermediates.

NSPW-L30SS suppresses the growth of bacteria, fungus, mold and mildew which can cause unpleasant odors, discoloration, staining and deterioration of untreated manufactured products.

Finished products containing NSPW-L30SS antimicrobials may not make public health claims relating to antimicrobial activity without EPA pesticide registration. When used in treated articles, this product does not protect users of any such treated article or others against food borne or disease causing bacteria, viruses or other disease causing organisms.

DIRECTIONS FOR USE

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

The maximum application rate for industrial polymeric intermediates is 2% by weight of NSPW-L30SS. This dosage applies only to intermediate manufacturing/industrial uses. It does not apply to active ingredient concentrations in consumer finished products.

Polymeric intermediates containing NSPW-L30SS Antimicrobials (master batch) may be integrated into finished products during the manufacturing process at 5.00 -15.00% by weight.

The maximum application rate for treatment of finished product is 15.0% by weight of Polymeric Intermediates containing 2% NSPW-L30SS.

The maximum silver content for consumer finished products is 0.003% or 30 ppm.

NSPW-L30SS

This product is not for use in applications involving food contact, food packaging, or drinking water.

NON-FOOD USE; INDOOR; FIFRA§ 2 (mm) USES:

Plastics including Films, Sheets, Slabs and Molded Plastic Parts; Textiles

House Wares- Trash cans; dish drainers; place mats; mops; brooms; dust pans; non-food contact scrub brushes; door mats; window blinds; non-food contact containers; liners; dish mats; draperies; furniture; upholstery; non food contact surfaces in blenders, mixers

Building Materials- base boards; siding; wall board; hand railing; chair railing; trim and molding; floor covering; light switches and fixtures; plastic decking; fencing; carpeting; indoor/outdoor carpeting; tile; hardware; handles; wall covering; mop board; splash guards; Astro turf; artificial turf; gable vents; window frames and trim, screens; awnings; grout; chalk

Bathroom Fixtures and Accessories- toilet seats; toilet brushes; toilet plungers; mats; shower curtains; hardware; showers; tubs; bath seats

Electronics and Appliances- cell phones; computers; public and residential phones; remote controllers; vacuum cleaners; liners; control cabinets; plastic components in humidifiers; TV's; microphones; head phones

Personal Care- combs and brushes; electric razors; blow dryers; curling irons; curlers; scrub brushes

Automotive and Equipment- interior components; carpet; accessories

Hospitals and Institutional Facilities and Equipment- beds; wall coverings; curtains; trim; mop boards; flooring; walkers; wheel chairs; bath seats; transfer benches; transfer boards; crutches; canes; bed pans; bed side commodes; mattress covers; sharps containers; linens

Sporting Goods- golf bags; exercise equipment; gripping tape; golf shoes; rucksack/ back packs; life preservers

Textiles- performance sportswear; nursing uniforms and apparel; shoes and footwear; military uniforms and equipment; carpeting (indoor/outdoor) and artificial-turf; watch bands; restaurant uniforms and chief apparel

Miscellaneous Applications- cat litter boxes; swimming pool construction material and equipment; spas construction materials and equipment; shopping cart handles; ink pens; dish busing trays; service trays; patio furniture; conveyor belts; non-potable water pipe/tubing; flash lights; distress signals; soap dispensers; paper towel dispensers; hand dryers; port-a-potties; office supplies; luggage

Confidential Statement of Formula may be entitled to confidential treatment