BEYOND PESTICIDES
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September 30, 2015

Lisa Brines, Ph.D.
National List Manager
USDA/AMS/NOP, Standards Division
1400 Independence Ave. SW
Room 2648-So., Ag Stop 0268
Washington, DC 20250-0268

Re. Petition for the listing of soy wax on §205.601

Dear Dr. Brines:

This petition is submitted on behalf of Beyond Pesticides. Beyond Pesticides, founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and groups around the world.

Microcrystalline cheesewax is listed at

> §205.601 (o) As production aids. Microcrystalline cheesewax (CAS #'s 64742-42-3, 8009-03-08, and 8002-74-2)-for use in log grown mushroom production. Must be made without either ethylene-propylene co-polymer or synthetic colors.

Microcrystalline cheesewax is a petroleum product, and as such, is the product of a series of processes from oil extraction to refining and manufacture that damage the environment and pose risks to the health of humans and the ecosystem. We have become aware that an alternative product made from soy wax (hydrogenated soy oil) is available and marketed for the same use. The company that makes the wax claims that it is made from domestically grown, non-GMO soybeans. We believe that this material is more compatible with organic and sustainable production and should be allowed to be used in organic mushroom culture. We are not currently petitioning for the removal of microcrystalline cheesewax, but we foresee that possibility if there should prove to be sufficient quantities of soy wax available.

We request the following listing on §205.601:

> **Soy wax for use in log grown mushroom production. Must be made with non-GMO soy oil from domestic sources. Until December 31, 2020 [or such date that is five years after the listing becomes effective.]**

The annotation is based on the product that we know to be available and the possibility that a better product –made from organically grown soybeans and possibly produced by methods that would make it nonsynthetic—could be available within five years.

Thank you for your consideration of this petition. Again, we request that this petition be considered simultaneously with the sunset review of aqueous potassium silicate.

Sincerely,

Terry Shistar, Ph.D.
Board of Directors

Petition for the Listing of Soy Wax on §205.601

ITEM A

1. Synthetic substance's allowed for use in organic crop production;

Soy wax is a synthetic substance that is being petitioned for use in organic crop production – specifically, to seal plugs and ends of logs inoculated with mushroom sawdust or plugs.

We request the following listing on §205.601:
Soy wax for use in log grown mushroom production. Must be made with non-GMO soy oil from domestic sources. Until December 31, 2020.

ITEM B

1. The substance's common name.

Soy wax.

2. The manufacturer's name, address, and telephone number.

Petitioner is
Beyond Pesticides
701 E Street SE
Washington, DC 20003
202-543-5452

A manufacturer is:
Nature's Gifts International, LLC
10524 Lexington Dr.
Knoxville, TN 37932
865-690-3183

3. The intended or current use of the substance such as use as a pesticide, animal feed additive, processing aid, nonagricultural ingredient, sanitizer, or disinfectant.

Soy wax is used for the same purpose as microcrystalline cheesewax, which is currently listed at §205.601(o) as a production aid in the production of saprophytic mushrooms grown on logs.

4. A list of the crop, livestock, or handling activities for which the substance will be used. If used for crops or livestock, the substance's rate and method of application must be described. If used for handling (including processing), the substance's mode of action must be described.

Soy wax is used for the same purpose as microcrystalline cheesewax, which is currently listed at §205.601(o) as a production aid in the production of saprophytic mushrooms grown on logs. It is melted and applied by brushing onto log ends and holes where mushroom spawn is inserted.

5. The source of the substance and a detailed description of its manufacturing or processing procedures from the basic component(s) to the final product. Petitioners with concerns for confidential business information can follow the guidelines in the Instructions for Submitting Confidential Business Information (CBI) listed in #13.

Soy wax sold by Fungi Perfecti is made from domestically-grown non-GMO soybeans. It is "made from the oil of soybeans. After harvesting, the beans are cleaned, cracked, de-hulled, and rolled into flakes. The oil is then extracted from the flakes and hydrogenated. The hydrogenation process converts some of the fatty acids in the oil from unsaturated to saturated. This process dramatically alters the melting point of the oil, making it a solid at room temperature."[1] Since hydrogenation causes a chemical change not produced naturally, soy wax appears to be a synthetic substance.

More detailed information from a general soy wax website:

> Soybean oil is separated from the solid components by solvent extraction or by mechanical pressing. This raw oil will be further refined and bleached. About 60 kg of soybeans are required to produce 10 kg of soybean oil. The soy solids, which remain after oil extraction, can be used as cattle feed. To make the soybean oil more solid (to make wax of it) it is hydrogenated.
>
> The exact steps to produce soy wax are well protected and every producer may have his own secrets. The main step in making soy wax is hydrogenation. Hydrogenation is the process whereby the poly- and monounsaturated oils are solidified in order to increase the viscosity. This is done by reaction of hydrogen with the oil at elevated temperature (140-225°C) in the presence of a nickel catalyst.
>
> It is important to stir the mixture to help dissolve the hydrogen and to achieve a uniform distribution of the catalyst with the oil. The hydrogenation process will create saturated fats (the double bonds are converted into single bonds) which are not very healthy for human consumption because the contain trans-fats!. However, for making soy candles or soy wax this is not a problem.[2]

6. A summary of any available previous reviews by State or private certification programs or other organizations of the petitioned substance.

We have been unable to find reviews by state or private certification programs or other organizations.

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[1] http://www.candlescience.com/learning/what-is-soy-wax

[2] http://www.soya.be/soy-wax-production.php

7. Information regarding EPA, FDA, and State regulatory authority registrations, including registration numbers.

Soybean oil, hydrogenated is listed as GRAS when it migrates from cotton and cotton fabrics used in dry food packaging – at 21 CFR 182.70.

8. The Chemical Abstract Service (CAS) number or other product numbers of the substance and labels of products that contains the petitioned substance.

The CAS number of hydrogenated soy oil (soy wax) is 8016-70-4. A label is attached in Appendix A.

9. The substance's physical properties and chemical mode of action including

(a) chemical interactions with other substances, especially substances used in organic production;

The purpose of the wax is to provide a physical barrier that preserves moisture and excludes competing fungi and other organisms from colonizing cut ends and holes in mushroom logs. Vegetable oils have been tested and found to be biodegradable in soil.[3] Polymerized soybean oil was 90%–100% mineralized to CO2 after 70 days at 30_C.[4]

(b) toxicity and environmental persistence;

Vegetable oils have been tested and found to be biodegradable in soil.[5]

Toxicity:[6]
Eye Effects: Solid material is not expected to be an eye irritant; however, contact with molten wax may cause thermal burns. Vapors from molten wax may cause watering of the eyes.
Skin Effects: Solid material is not expected to be a skin irritant; however, skin contact with molten wax may cause thermal burns. No harmful effects from skin absorption are expected.
Inhalations: Vapors emitted from molten wax are expected to have a low degree of irritation by inhalation.
Ingestion: No harmful effects expected.
Human Effects of Overexposure: Effects of overexposure may include irritation of the nose and throat.

(c) environmental impacts from its use or manufacture;

Soybeans are often genetically engineered to be resistant to herbicides, which increases the environmental impact of chemical-intensive soybean production. For this reason, we request an annotation, “made from domestically-produced non-GMO soybeans,” with an expiration date

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[3] Shogren, R. L., Petrovic, Z., Liu, Z., & Erhan, S. Z. (2004). Biodegradation behavior of some vegetable oil-based polymers. *Journal of Polymers and the Environment*, *12*(3), 173-178.
[4] Shogren, R. L., Petrovic, Z., Liu, Z., & Erhan, S. Z. (2004). Biodegradation behavior of some vegetable oil-based polymers. *Journal of Polymers and the Environment*, *12*(3), 173-178.
[5] Shogren, R. L., Petrovic, Z., Liu, Z., & Erhan, S. Z. (2004). Biodegradation behavior of some vegetable oil-based polymers. *Journal of Polymers and the Environment*, *12*(3), 173-178.
[6] Soy wax MSDS, http://www.jacquardproducts.com/assets/jacquard-site/support/msds/waxes/Soy%20Wax.pdf

of December 31, 2015, to preclude the use of GMO or imported soybeans and to encourage the transition to an organically-produced product.

(d) effects on human health; and,

Hydrogenated soy oil is considered a trans-fatty acid and has been shown to increase the risk of heart disease, so health authorities recommend avoiding all but trace amounts in the diet.[7] Very little, if any, soy wax is expected to be consumed in edible mushrooms growing on logs treated with soy wax.

(e) effects on soil organisms, crops, or livestock.

As noted above, soy wax (hydrogenated soy oil) is biodegradable and non-toxic.

10. Safety information about the substance including a Material Safety Data Sheet (MSDS) and a substance report from the National Institute of Environmental Health Studies.

A substance report from NIEHS is not available. An MSDS is attached.

11. Research information about the substance which includes comprehensive substance research reviews and research bibliographies, including reviews and bibliographies which present contrasting positions to those presented by the petitioner in supporting the substance's inclusion on or removal from the National List.

Leatham, G. F. (1981). Cultivation of shiitake, the Japanese forest mushroom, on logs: a potential industry for the United States. Forest Products Laboratory.

Miles, P. G., & Chang, S. T. (2004). Mushrooms: cultivation, nutritional value, medicinal effect, and environmental impact. CRC press.

Chen, A. W. (1999). Cultivation of the medicinal mushroom Ganoderma lucidum (Curt.: Fr.) P. Karst.(Reishi) in North America. International Journal of medicinal mushrooms, 1(3).

Ito, T. (1978). Cultivation of Lentinus edodes. In The biology and cultivation of edible mushrooms (pp. 461-473). Academic Press London.

Mayzumi, F., Okamoto, H., & Mizuno, T. (1997). IV. Cultivation of reishi (Ganoderma lucidum) Cultivation of reddish reishi (Ganoderma lucidum, Red). Food Reviews International, 13(3), 365-370.

Stamets, P. (2005). Mycelium running: how mushrooms can help save the world. Random House LLC.

Bruhn, J. N., Mihail, J. D., Wetteroff, J. J., Clark, T. A., & Pickens, J. B. (2003). Evaluating management practices for log-grown shiitake production in Midwestern agroforestry. UNITED STATES DEPARTMENT OF AGRICULTURE FOREST SERVICE GENERAL TECHNICAL REPORT NC, 88-100.

Averbach, B. L. (1992). U.S. Patent No. 5,130,151. Washington, DC: U.S. Patent and Trademark Office.

http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC34456 (soy oil)

[7] http://en.wikipedia.org/wiki/Trans_fat

http://www.purdue.edu/uns/html4ever/0007.Tao.biofuels.html Plant oils will replace petroleum in coming years.
http://www.goodyear.com/cfmx/web/corporate/media/news/story.cfm?a_id=792 Goodyear Discovers Soybean Oil Can Reduce Use of Petroleum in Tires
http://www.machinerylubrication.com/Read/1093/soybean-oil-environmental Soybean Oil Offers High Performance, Low Environmental Impact
http://www.machinerylubrication.com/Read/240/biodegradable-biobased-lubricants Biodegradable/Biobased Lubricants and Greases
http://www.biocom.iastate.edu/newsroom/newsreleases/biobased-waxes.html Iowa State University Researcher Sees Market Potential for Biobased Wax Coatings
http://www.greenbiz.com/news/2000/07/22/researchers-take-wraps-biodegradable-wax-paper Researchers Take Wraps off Biodegradable Wax Paper

12. A "Petition Justification Statement" which provides justification for one of the following actions requested in the petition:

A. Inclusion of a Synthetic on the National List, §§ 205.601, 205.603, 205.605(b)

• Explain why the synthetic substance is necessary for the production or handling of an organic product.

Sealing log ends and plug holes increases the chance of success in inoculating logs with edible and medicinal saprophytic fungi, including shitake, reishi, maitake, lion's mane, oysters, turkey tail, and chicken of the woods. [8] Crystalline cheesewax, which is currently listed for the use, is made from petroleum. Soy wax is now available for the use. Although soy wax is also synthetic, it is available in products made from non-GMO, domestically-produced soy beans, which have fewer environmental and health impacts than products made from petroleum.[9]

• Describe any non-synthetic substances, synthetic substances on the National List or alternative cultural methods that could be used in place of the petitioned synthetic substance.

Mushrooms may be grown on logs without any sealant, but the use of a sealant increases the chances of success by reducing parasites, competitors, and drying.[10] Other materials that are used for sealing are Styrofoam plugs (used for plug holes, but not for log ends), crystalline cheesewax, and beeswax. Styrofoam is not biodegradable and is difficult to retrieve. Crystalline cheesewax is made from petroleum. Beeswax is environmentally sound, but in practice short-lived because it cracks in cold weather and is attractive to some insects and rodents.[11]

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[8] Fungi Perfecti, Mushroom Plug Spawn for Log and Stump Cultivation. http://www.fungi.com/pdf/instructions/kits/PLUG_SPAWN.pdf
[9] http://www.fungi.com/product-detail/product/sealing-wax-for-plug-spawn-10-pounds.html http://www.shroomsupply.com/raw-ingredients/sealing-wax-for-plug-spawn
[10] Fungi Perfecti, Mushroom Plug Spawn for Log and Stump Cultivation. http://www.fungi.com/pdf/instructions/kits/PLUG_SPAWN.pdf
[11] Petition for crystalline cheesewax, p. 9.

• Describe the beneficial effects to the environment, human health, or farm ecosystem from use of the synthetic substance that support its use instead of the use of a non-synthetic substance or alternative cultural methods.

The beneficial impacts of soy wax come from its substitution for crystalline cheesewax. Crystalline cheesewax is a petroleum product. Its acceptability for this use came from the lack of better alternatives. Soy wax is a better alternative, being derived from an agricultural product.

The annotation that requires production from non-GMO soybeans will reduce environmental impacts associated with the production of the soybeans, as well as pesticide residues in the wax. The requirement that the soybeans be domestically-produced reduces the transportation impact and supports U.S. agriculture. The expiration date will allow this listing to be further annotated in the future to require use of organic soybeans, if possible, or to be removed in favor of a totally nonsynthetic alternative. Because the NOSB's sunset policy prohibits annotation at sunset, these possibilities are only possible with an expiration date.

Until September 2013, sunset would have resulted in prohibition of the use of the substance after the sunset date unless the NOSB voted to renew the use. If this petition is approved, then use of soy wax will be prohibited in organic crop production after the expiration date unless a petition to extend the use is approved. In eliminating the possibility of annotation during sunset proceedings, the program said,

> If the Subcommittee identifies new information that it believes merits reconsideration of a use restriction for a substance (e.g., to expand its use, further restrict its use, or correct its restrictive annotation), then a member of the Subcommittee or a member of the public can file a petition to change the use of a substance through the National List Petition Process. Changes to or addition of annotations to substances already on the National List cannot be proposed during the Sunset Process.

If this process is acceptable to require of the public to annotate a listing, then it should be acceptable to require of those desiring to extend a listing.

The NOSB can and does put expiration dates on listings for a number of reasons. For example, the NOP response to the April 2014 NOSB meeting states,

> The NOSB has previously debated the suitability of the use of streptomycin in organic production, which resulted in one rulemaking action that amended the listing for streptomycin on the National List (7 CFR 205.601(i)(11)) by adding an expiration date of October 21, 2014 (77 FR 33290).
>
> The main reasons for adding the expiration dates for streptomycin were: 1) to acknowledge that the use of antibiotics in the environment contributes to antibiotic resistance; and 2) to prompt research and development of alternatives acceptable for use in organic production.

Our petition is not a petition for removal. It is a petition to add a material to the National List for a limited time, knowing that a better alternative is possible. An expiration date will merely require someone to re-petition to relist the substance.

We do not claim that soy wax with the proposed annotation does not currently meet OFPA criteria, but those criteria are for an exception to a general rule based on a need determined partly by a lack of a better alternative. The expiration date is needed to subject the material to a full review according to the standards required by OFPA. Under NOP's revised sunset policy such a review does not occur because the subcommittee may choose not to produce a delisting motion that would subject the material to full board review, and the material does not require a decisive vote in order to be relisted. Thus, evidence that we present now regarding shortcomings (that the soybeans are not organic and the process for making wax involves chemical change) indicates that the material should not remain on the list indefinitely, as is likely under the current NOP policy.

We do not know that soy wax that is organic and/or nonsynthetic will be available by the expiration date. However, organic production operates on a premise of continual improvement, so we always anticipate the possibility of such alternatives, which should receive comprehensive review in five years, according to OFPA criteria and standards. This, again, is the reason for sunset.

We have not petitioned for removal of a substance. We have petitioned to add an expiration date. As explained above, the NOSB has recommended expiration dates in the past and has not regarded them as removal recommendations.

Appendices:
MSDS
EcoSoya Purity Statement
Soy wax label

Soy wax label:

EcoSoya®
Safety Data Sheet

Date prepared: September 27, 1999 **Date last revised:** June 16, 2014

1. Identification of the Substance/Preparation and the Company/Undertaking

1.1 Substance or preparation trade names: EcoSoya® CB-135, EcoSoya® CB-Advanced Soy, EcoSoya® CB-XceL, EcoSoya® Pillar Blend (PB), Eco-Wick-Wax

1.2 Other means of identification: Waxes made from vegetable oils.

1.3 Recommended use of the chemical and restrictions on use: Blends formulated for candle and wick coating applications. No known restrictions on usage.

1.4 Supplier details:

Nature's Gifts International, LLC
10524 Lexington Dr.
Suite 400
Knoxville, Tennessee 37932
United States of America
Telephone: 1-865-690-3183

1.5 Emergency telephone number: 1-865-690-3183

2. Hazards Identification

2.1 Classification of the substance or mixture: Does not contain any components which are hazardous according to the Dangerous Substance Directive (67/548/EC) or CLP Regulation 1272/2008/EC.

2.2 Label Elements: Does not require a hazard warning label in accordance with Dangerous Substance Directive 67/548/EC, 1999/45/EC or CLP Regulation 1272/2008/EC.

2.3 Other Hazards:

Health:	Unlikely to cause eye irritation. Unlikely to cause skin irritation. Not volatile. It is not likely to be an inhalation hazard at normal ambient temperatures. If overheated, fumes and vapors are irritating to the breathing passages and lungs. Ingestion is not likely to cause adverse systemic health effects.
Environmental:	Although no specific ecological hazards are expected and bioaccumulation is unlikely, spillage into the environment should always be avoided.
Physical/Chemical:	Not applicable.
Additional Information:	Hot melted wax can cause serious burns. Administer first aid procedures and seek emergency medical treatment immediately.

3. Composition

3.1 Chemical Identity: Mixture of saturated and unsaturated fatty acid vegetable lipids predominantly containing triglycerides, diglycerides and monoglycerides.

3.2 Common nomenclature: Hydrogenated and partially hydrogenated vegetable oil.

3.3 Other unique identifiers: Not Applicable.

4. First Aid Measures

4.1 Description of First Aid Measures

Inhalation: Remove the affected person to fresh air. If recovery is not rapid, seek medical attention.

Skin Contact: Wash the affected body parts with soap and warm water. If adverse skin effects follow seek medical attention.
Note: Hot melted wax can cause serious burns. If required, administer first aid procedures and seek emergency medical treatment immediately.

Ingestion: Do not induce vomiting. If adverse health effects follow seek medical attention.

Eye Contact: Flush eyes immediately with temperate water for at least 5 minutes while holding the eyelids open. If adverse eye effects follow seek medical attention.

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

Inhalation: Over-heated wax can produce fumes which may be an irritant when inhaled.

Skin Contact: Sensitive individuals may experience dermatitis after prolonged exposure.

Ingestion: No known significant effects or critical hazards.

Eye Contact: May cause slight irritation to eyes.

4.3 Indication of immediate medical attention and special treatment needed

In contact with or splashed by HOT molten liquid:

Skin Contact: Cool the skin immediately with cool water. Treat burns according to their severity. To avoid damage to the skin no attempt should be made to remove wax firmly adhering to the skin. In case of circumferential burns splitting of the wax ring may be considered to prevent tourniquet effect. Obtain medical attention immediately. Never try to remove the material with solvents.

Eye Contact: Cool the area immediately with cold water. Obtain medical attention immediately and seek the advice of an ophthalmologist.

5. Fire Fighting Measures

5.1 Extinguishing media: Foam, Carbon Dioxide or Dry Chemical. Because water can spread the fire; it is advisable to avoid a direct water stream for extinguishing.

5.2 Special hazards arising from the substance or mixture: Potential flammability hazard when wax vapors are exposed to heat or flame. During a fire carbon monoxide and carbon dioxide gases may be generated by thermal decomposition or combustion.

5.3 Advice for firefighters: Only suitably trained personnel should attempt to tackle fires. Use standard firefighting procedures when extinguishing fat or oil fires.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Take precautionary measures to avoid slippery surfaces caused by spills, use sand or comparable material for traction where needed.

6.2 Environmental precautions: Confine spill with sand or other adsorbent inert media. Do not allow the product to enter public drainage system or open water courses.

6.3 Methods and material for containment and clean up: Use sand or active clay to absorb molten product or allow to set before removal. Scrape up spilled substance and remove to containers for disposal in accordance with governmental regulations. Clean area with detergent and hot water.

6.4 Reference to other Sections: See sections 8 and 13

7. Handling And Storage

7.1 Precautions for safe handling: Sensitive individuals may experience dermatitis after prolonged exposure to the skin. If handling containers of hot wax, insulated neoprene gloves, aprons and boots, face shields or other personal protective equipment may be required. Wash hands after working with the material. Do not wear contaminated clothing. Excessive inhalation of oil mist may affect the respiratory system. Hot oil mist is classified as a nuisance particle by ACGIH.

7.2 Conditions for safe storage, including any incompatibilities: Keep containers tightly closed and stored in a cool dry area out of direct exposure to heat and sunlight preferably at 72°F (22°C).

7.3 Specific end use(s): This material is formulated for use in the manufacture of candles.

8. Exposure Controls/Personal Protection

8.1 Occupational exposure limit values: Liquid or solid: None known. Oil Mist: suggested-15 mg/m^3 total particles.

8.2 Control Parameters: If exposed to hot oil mist, an appropriate NIOSH approved respirator for organic vapors may be required. If handling containers of hot wax, insulated neoprene gloves, aprons and boots, face shields or other personal protective equipment may be required. Ventilation should be provided in areas where hot wax is being used.

As with any hot liquid, hot wax can burn the skin. In all circumstances exposure should be kept as low as reasonably possible by good ventilation and safe working practices.

8.3 Appropriate engineering measures: No special measures needed.

8.4 Individual protection measures: Exposure guidelines: Shortening: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Respiratory protection: Inhalation of the vapor, fumes or mists should be avoided by safe working practices and good ventilation. If exposed to hot oil mist, an appropriate NIOSH approved respirator for organic vapors may be required.

Eye Protection: No special precautions are needed beyond clean working conditions and safe handling practices. Safety glasses with side protection or better may be required.

Skin Protection: No special precautions are needed beyond clean working conditions and safe handling practices. Insulated neoprene, PVC or nitrile gloves, aprons and boots, face shields or other personal protective equipment may be required.

9. Physical And Chemical Properties

9.1 Information on basic chemical and physical properties

Appearance:	Solid - white to off white at ambient temperature. Liquid - amber
Odor:	Typical of vegetable oil
pH:	Neutral
Melting Point:	110°F to 175°F (43.3°C to 79.4°C) AOCS Cc18-80
Congealing Point:	93°F to 138°F (33.9°C to 58.9°C) ASTM D938
Boiling Point / Range:	Not determined
Flash point:	>450°F (>232°C) ASTM D92
Evaporation Point:	Not determined
Flammability (solid, gas):	Gas may be combustible at high temperature
Vapor Density (Air=1.0):	Exceeds 1.0
Specific Gravity:	0.890 to 0.894 ASTM D1298-55
Solubility in water:	<1 mg/l
Solubility in other solvents:	Not determined
Auto-ignition temperature:	>392°F (>200°C)
Decomposition temperature:	Not determined
Viscosity:	10.0 ASTM D 445-65

9.2 Other Information

Weight:	Pounds per Gallon - 7.37 to 7.61 Kilograms per liter – 0.88 to 0.91

10. Stability and Reactivity

10.1 Reactivity: This product is not reactive under normal storage and handling conditions (see section 7).

10.2 Chemical stability: Considered stable, no known reactivity problems.

10.3 Possibility of hazardous reactions: No specific hazardous reactions expected.

10.4 Conditions to avoid: The product is combustible when heated over 450°F (232°C).

10.5 Incompatible materials: May react with strong alkali and oxidants.

10.6 Hazardous decomposition products: Thermal decomposition or incomplete combustion may produce carbon monoxide, carbon dioxide and irritating fumes.

11. Toxicological Information

11.1 Information on toxicological effects: Shortening: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A. Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects

Inhalation: Not volatile. It is not likely to be an inhalation hazard at normal ambient temperatures. If overheated, fumes and vapors may irritate the breathing passages and lungs.

Skin contact: Unlikely to cause skin irritation. Long or repeated contact with skin may cause dermatitis in certain sensitive individuals. Hot molten product may cause thermal burns.

Eye contact: Unlikely to cause eye irritation. Hot molten product may cause thermal burns and severe corneal damage.

Ingestion: Ingestion is unlikely to cause adverse systematic health effects.

Other: No known Acute or chronic health hazards. Vegetable waxes are generally regarded as non-toxic, relatively harmless and not irritating under normal usage.

12. Ecological Information

12.1 Ecotoxicity: No known significant effects or critical hazards. Not considered an environmental hazard

12.2 Persistence and degradability: These products are biodegradable.

12.3 Bioaccumulative potential: Data not available.

12.4 Mobility in soil: Data not available.

12.5 Other adverse effects: None known. No ecological problems are to be expected when the product is handled and used as instructed.

13. Disposal Information

13.1 Disposal: Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Disposal must be made according to official regulations.

14. Transport Information

14.1 UN number: Not classified.

14.2 UN Proper shipping name: Not classified.

14.3 Transport Hazard Class(es): Not classified

14.4 Packing Group: Not classified

14.5 Environmental Hazards: None

14.6 Special Precautions for user: None

14.7 DOT Shipping Name: Not regulated by DOT.

14.8 Canada TDG: Not regulated by TDG.

14.9 Transport in bulk according to Annex II of MARPOL&3/78 and the IBC code: Not classified

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture: Regulations No.2037/2000 (Ozone depletors), No. 850/2004 (POPs) and No. 689/2008 (Export/import of dangerous chemicals) not applicable for these materials.

15.2 EINECS: Not Listed

15.3 WHMIS Canada: Not WHMIS Controlled.

15.4 TSCA: All components are listed or exempt.

15.5 California Proposition 65: Not listed.

15.6 Chemical Safety Assessment: Not determined.

16. Other Information

Abbreviations and Acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

DISCLAIMER:

The information contained in this SDS is believed to be correct and accurate. However, no warranty of any kind is expressed or is to be implied regarding; the accuracy or completeness of this information, the results to be obtained from the use of this information or the products, the safety of the products, or the hazards related to their use.

The supplied information and products are provided on the condition that the recipient shall make their own determination as to the suitability of the products for their application(s) and with the condition that they assume all risk for their use(s). It is the user's obligation to determine conditions of safe use of the information and products.

EcoSoya

Research began on EcoSoya in 1992 with the goal of creating all-natural waxes from renewable resources. Countless materials were tested, processed, and developed to create our current products. EcoSoya has set the benchmark for any vegetable wax based on its quality and performance.

EcoSoya® processing starts with domestically grown, U.S. soybeans from which the oil is separated. The oil is then purified and goes through a process called hydrogenation which changes it from liquid oil to a solid shortening at room temperature. Depending on the wax, we incorporate the finest botanical oils available. Finally, all EcoSoya waxes go through our Molecular Blueprinting to overcome natural variations in soy and the polymorphic characteristics of soy crystallization, resulting in a more stable, balanced soy wax.

All our EcoSoya waxes undergo an average of 75 laboratory tests to assure premium quality and consistency. Unlike other vegetable or soy waxes on the market, EcoSoya soy waxes are 100% vegetable, guaranteed! With our Molecular Blueprinting technology and attention to detail, it's no wonder people agree that EcoSoya is the #1 soy wax for making candles.

Purity of EcoSoya

We designed all the manufacturing processes to purify our waxes so thoroughly as to remove any presence of pesticides, herbicides or Genetically Modified Materials (GMM). These processes have verified and confirmed to be 100% effective by experienced third party Accredited Laboratory analysis of each of our waxes. All results have proven that our manufacturing processes ensure EcoSoya CB-135, CB-Advanced Soy, CB-XceL and PB contain NONE of these substances.

We use good, old-fashioned, farm-grown soybeans to create all our environmentally friendly EcoSoya soy waxes. EcoSoya CB-135, CB-Advanced Soy, CB-Xcel and PB are further enhanced with the finest carefully selected botanical oils, adding to their performance characteristics. All EcoSoya soy waxes are guaranteed to contain NO petroleum, paraffin, animal or beeswax products and all EcoSoya soy waxes are 100% vegetable.

Every ingredient meets the United States Food and Drug Administration and Kosher Certification criteria. Every pound of our wax is analyzed in a state of the art laboratory at least 75 different times to assure its quality. EcoSoya soy wax only leaves the plant after receiving a Certificate of Analysis, guaranteeing our high standards are met.

All EcoSoya soy waxes:

- Are 100% vegetable, made with Pure Soybean oil, GUARANTEED!
- Are all NATURAL and biodegradable.
- Are manufactured meeting FDA standards.
- Are Kosher Certified.
- Are NOT tested on animals.

- Contain NO animal products.
- Contain NO palm wax.
- Contain NO petroleum, paraffin or beeswax products.
- Contain NO pesticides and NO herbicides.
- Contain NO toxic materials.
- Contain NO Genetically Modified Material.
- Is considered GRAS under the Food, Drug and Cosmetic Act.