1.0 Purpose

The purpose of this procedure is to provide guidelines for the establishment of specifications to control the identity, strength, composition, and purity of products manufactured by Ion Labs, Inc.

2.0 Scope

This procedure is applicable in establishing specifications for the release of components and raw materials used to manufacture food products, cosmetic products, dietary supplements, and drug products. It is also applicable to the establishment of stability and release specifications for these products. While this SOP provides guidance for establishing specifications, additional considerations may be required for each individual component, raw material, or product to reasonably ensure the identity, strength, composition, and purity of finished products manufactured by Ion Labs, Inc.

3.0 Responsibility

3.1 It is the responsibility of the QC Lab, R&D and Analytical Development to establish appropriate specifications for raw materials and manufactured products to control the identity, strength, composition and purity of products manufactured by Ion Labs.

4.0 Definitions

4.1 **TAMC** – Total Aerobic Microbial Count

4.2 **TYMC** – Total Combined Yeast/Molds Count

4.3 **Drug** - The Federal Food, Drug, and Cosmetic Act (FD&C Act) and FDA regulations

define the term drug as:

4.3.1 A substance recognized by an official pharmacopoeia or formulary.

4.3.2 A substance intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease.

4.3.3 A substance (other than food) intended to affect the structure or any function of the body.

4.3.4 A substance intended for use as a component of a medicine but not a device or a component, part or accessory of a device.

4.3.5 Biological products are included within this definition and are generally covered by the same laws and regulations, but differences exist regarding their manufacturing processes (chemical process versus biological process.)

4.4 **Dietary Supplement -** Congress defined the term "dietary supplement" in the Dietary Supplement Health and Education Act of 1994 (DHSEA). A dietary supplement is a product taken by mouth that contains a "dietary ingredient" intended to supplement the diet. Dietary supplements can also be extracts or concentrates, and may be found in many forms such as tablets, capsules, softgels, gelcaps, liquids, or powders. They can also be in other forms, such as a bar, but if they are, information on their label must not represent the product as a conventional food or a sole item of a meal or diet. Whatever their form may be, DSHEA places dietary supplements in a special category under the general umbrella of "foods," not drugs, and requires that every supplement be labeled a dietary supplement. Unlike drugs, *supplements are not intended to treat, diagnose, prevent, or cure diseases.* That means supplements should not make claims, such as "reduces pain" or "treats heart disease." Claims like these can only legitimately be made for drugs, not dietary supplements.

4.5 **Dietary Ingredient / New Dietary Ingredient -** DHSEA defined both of the terms "dietary ingredient" and "new dietary ingredient" as components of dietary supplements. In order for an ingredient of a dietary supplement to be a "dietary ingredient," it must be one or any combination of the following substances:

4.5.1 a vitamin

4.5.2 a mineral

4.5.3 an herb or other botanical

4.5.4 an amino acid

4.5.5 a dietary substance for use by man to supplement the diet by increasing the total dietary intake

4.5.6 a concentrate, metabolite, constituent, or extract

4.5.7 A "new dietary ingredient" is one that meets the above definition for a "dietary ingredient" and was not sold in the U.S. before October 15, 1994.

4.6 **Color Additive -** A color additive is a dye, pigment or other substance, which is capable of imparting color when added or applied to a food, drug, cosmetic, or to the human body. The legal definition can be found in Section 201(t) of the FD&C Act and provides exclusions as well. Color additives for use in food, drugs, and cosmetics require premarket approval.

4.7 **Colorant -** A colorant is a dye, pigment, or other substance that is used to impart color to or to alter the color of a food-contact material, but that does not migrate to food in amounts that will contribute to that food any color apparent to the naked eye. The term 'colorant' includes substances such as optical brighteners and fluorescent whiteners, which may not themselves be colored, but whose use is intended to affect the color of a food-contact material. (21 CFR 178.3297(a)).

4.8 **Food Additive -** A food additive is defined in Section 201(s) of the FD&C Act as any substance that may reasonably be expected to become a component of or otherwise affect the characteristic of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation intended for any such use).

4.9 **GRAS -** "GRAS" is an acronym for the phrase Generally Recognized As Safe. Under sections 201(s) and 409 of the FD&C Act, any substance that is intentionally added to food is a food additive, that is subject to premarket review and approval by FDA, unless the substance is generally recognized, among qualified experts, as having been adequately shown to be safe under the conditions of its intended use, or unless the use of the substance is otherwise exempted from the definition of a food additive. GRAS substances are distinguished from food additives by the type of information that supports the GRAS conclusion, that it is publicly available and generally accepted by the scientific community, but should be the same quantity and quality of information that would support the safety of a food additive. Additional information on GRAS can be found on the GRAS Notification Program page.

4.10 **Indirect Food Additive -** In general, these are food additives that come into contact with food as part of packaging, holding, or processing, but are not intended to be added directly to, become a component, or have a technical effect in or on the food. Indirect food additives mentioned in Title 21 of the U.S. Code of Federal Regulations (21CFR) used in food-contact articles, include adhesives and components of coatings (Part 175), paper and paperboard components (Part 176), polymers (Part 177), and adjuvants and production aids (Part 178). Currently, additional indirect food additives are authorized through the food contact notification program. In addition, indirect food additives may be authorized through 21 CFR 170.39.

4.11 **Secondary Direct Food Additive -** This term is in the title of 21 CFR 173, which was created during recodification of the food additive regulations in 1977. A secondary direct food additive has a technical effect in food during processing but not in the finished food (e.g., processing aid). Some secondary direct food additives also meet the definition of a food contact substance. For more on food contact substances, consult the Food Contact Substance Notification Program.

4.12 **Cosmetic -** The Federal Food, Drug & Cosmetic Act (FD&C Act) defines cosmetics as "articles intended to be rubbed, poured, sprinkled, sprayed on, introduced into, or otherwise applied to the human body...for cleansing, beautifying, promoting attractiveness, or altering the appearance." Included in this definition are products such

as skin moisturizers, perfumes, lipsticks, fingernail polishes, eye and facial makeup preparations, shampoos, permanent waves, hair colors, toothpastes, and deodorants, as well as any material intended for use as a component of a cosmetic product. The FD&C Act prohibits the sale of "any food, drug, device, or cosmetic that is adulterated or misbranded" [section 301(a); 21 U.S.Code 331(a)]. Furthermore, a cosmetic shall be deemed to be adulterated "if it bears or contains any poisonous or deleterious substance which may render it injurious to users under the conditions of use prescribed in the labeling thereof." While the law does not require cosmetics to have FDA approval before they go on the market, the FDA does monitor the safety of cosmetics, including their microbiological safety, and FDA can take action against cosmetics on the market that don't comply with the law (Microbiological Safety and Cosmetics, www.fda.gov).

Note: Some products qualify both as cosmetics and as OTC drugs. This may happen when a product has two intended uses, with ingredients intended to do two different things. For instance, a shampoo is a cosmetic, since its intended use is to cleanse the hair. An anti-dandruff treatment is a drug, because its intended use is to treat dandruff. Consequently, an anti-dandruff shampoo is both a cosmetic and a drug. Among other cosmetic/drug combinations are toothpastes that contain fluoride, deodorants that are also anti-perspirants, and moisturizers and makeup marketed with sun-protection claims.

4.13 **Food** - Food is any substance that is usually composed of carbohydrates, fats, proteins and water. It can be eaten or drunk by any animal including humans for nutrition or pleasure. Most of the foods are of plant or animal origin.

4.14 **IAV** - Ingredient Addition Verification (IAV) is the process of verifying that the required amount of an indicated ingredient has been added to the batch and calculating the resulting amount that would be in a final unit of product. This approach of strength assessment for a unit dose is necessary when it is not possible to test for a component in the final product. Emphasis is on verification of the quality of the incoming raw material.

5.0 References

5.1 21 CFR 110 Current Good Manufacturing Practice in Manufacturing, Packaging, or Holding Human Food.

5.2 21 CFR 111 Current Good Manufacturing Practice in Manufacturing, Packaging, Labeling, or Holding Operations for Dietary Supplements.

5.3 21 CFR 210 Current Good Manufacturing Practice in Manufacturing, Processing, Packaging, or Holding of Drugs; General

5.4 21 CFR 211 Current Good Manufacturing Practice for Finished Pharmaceuticals

5.5 21 U.S. Code Sections 321-399i – Federal Food, Drug, and Cosmetic Act

5.6 U.S. Department of Health and Human Services, National Institutes of Health, Office of Dietary Supplements, Dietary Supplement Health and Education Act of 1994.

5.7 USP <1112> Application of Water Activity Determination to Nonsterile Pharmaceutical Products.

5.8 USP < 232> Elemental Impurities – Limits

5.9 USP <2023> Microbiological Attributes of Nonsterile Nutritional and Dietary Supplements

5.10 USP <2232> Elemental Contaminants in Dietary Supplements

5.11 Bacteriological Analytical Manual, 8th Edition, Revision A, 1998. Chapter 23

5.12 California Proposition 65 (Prop 65) – Safe Drinking Water and Toxic enforcement Act of 1986

5.13 Food Safety Modernization Act (FSMA)

6.0 Establishment of Specification Steps

6.1 The establishment of specifications is dependent upon multiple factors. Those factors are discussed here and are presented as a flow chart in the next section.

6.1.1 FDA CFR Requirements

1. FDA CFR 111 defines the basic testing requirements for each component that is used in the manufacture of a dietary supplement along with the testing requirements for a Finished Batch. These requirements include establishing specifications to ensure Identity, Purity, Strength, and Composition. In addition, limits on those types of contaminates that may adulterate or may lead to adulteration of the finished batch of the dietary supplement to ensure the quality of the dietary supplement must be established.

6.1.2 Use Class

1. The determination of appropriate test specifications for a raw material or product is dependent upon the "Use Class" of the product or material. For finished products, the class of the product is determined based on the definitions provided in this SOP. For raw materials, the use class is determined based on the product the raw material will be used in.

2. For raw materials that are used in products with different use classes, the most restrictive class should be used. Alternatively, multiple ID numbers may be created for a multi-class raw material such that different specifications may be established depending upon the use.

6.1.3 Label Claims and Special Declarations

1. Additional specifications may be required based on label claims. Strength/Assay tests are required for components identified and quantitated on a label claim. Additionally, if a product label declares the product to be Organic, or Kosher, then restrictions or testing may need to be added to ensure that the product meets these claims. If the product claims to be USP, the USP monographs should be used to establish specifications.

6.1.4 Manufacturing Considerations

1. Certain specifications for raw materials may also be considered for product/ process functional requirements. For example, particle size, moisture levels, and density may all have an impact on production of a finished good. These requirements should be established when a New Product Assessment is completed.

6.1.5 Specific Regulations

1. Specific regulations are in place for some products and materials. For example, there are specific regulations associated with certain foods, dyes, etc. Additionally, if a product is manufactured to be distributed outside the USA, then regulations associated with that destination must be considered.

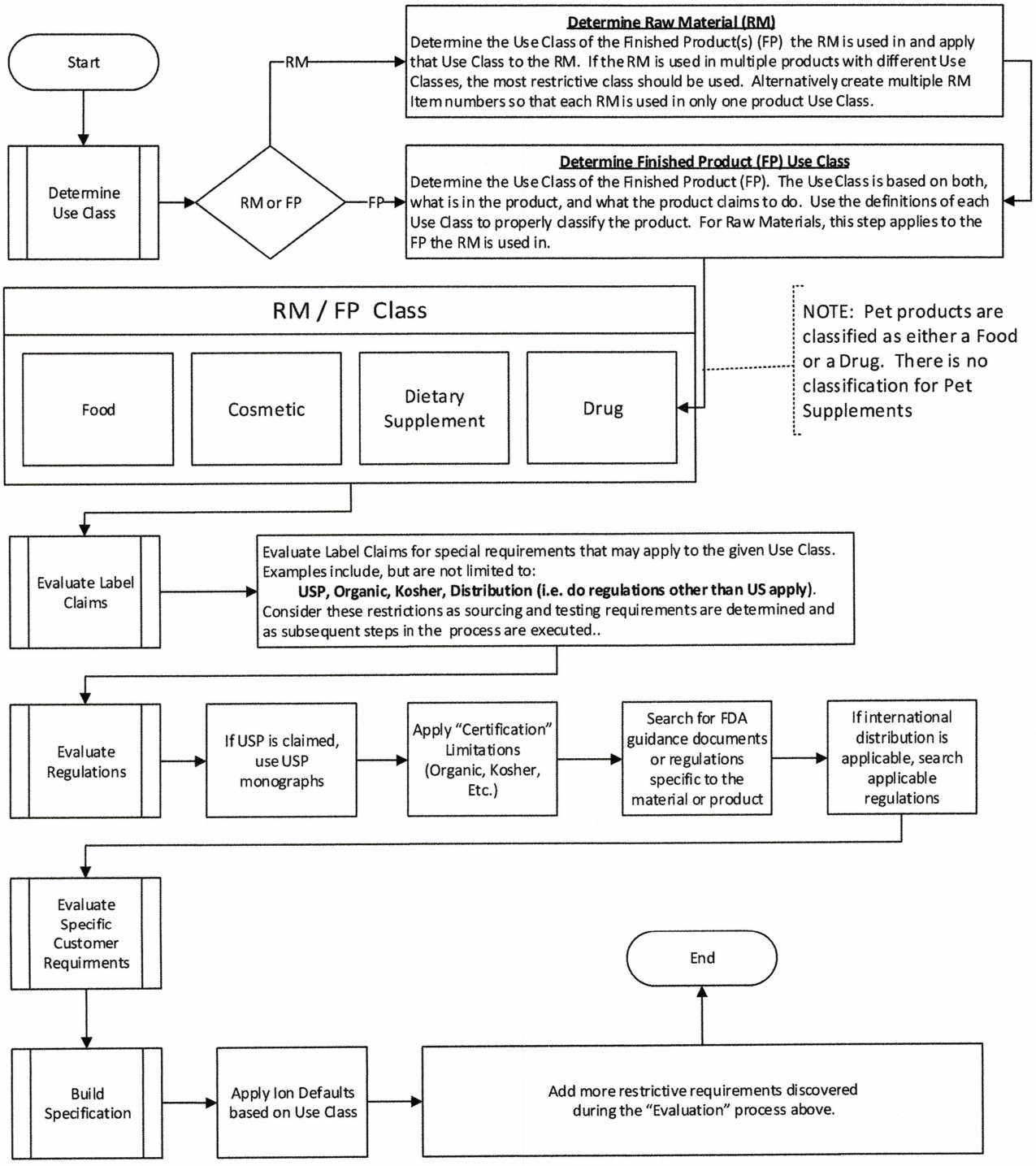
6.1.6 Customer Requirements

1. Customer requirements must also be considered. Specifications should ensure that the product manufactured will meet both the customer and regulatory expectations.

6.1.7 Summation of Considerations

1. The final specification is based on the summation of all of the considerations outlined above. If this process identifies conflicting testing or specification limits, then the most restrictive testing and limits should be chosen.

6.2 Establishment of Specification Flow Chart



6.3 Identification Tests

6.3.1 Identification testing is required for all raw materials regardless of the Use Class. Identification testing should optimally be able to discriminate between materials of closely related structure and/or species that are likely to be present. Identification testing may require more than one test to provide assurance of specific identification.

6.3.2 The following table lists preferred identification techniques based on material type. This is not an all-inclusive list. Any suitable method for identification may be selected.

Material Type	Preferred Test	Comment
Pure Materials	FTIR, Compendial, HPLC, or Raman	
Pure oils and oil mixtures	USP Fatty Acid Composition	Oils related to specific sources, i.e. coconut, olive, sunflower, will present a unique fatty acid profile.
Botanicals	TLC, Compendial, or HPLC component profile. Raman Spectroscopy if acceptable.	Reference material for some botanical species may be unavailable in the marketplace. Reference section 6.3.4 for further discussion.
Botanical Blends	TLC or HPLC component profile. Raman if acceptable.	Botanical blends may be identified using specific markers that are present in blend, in combination with other identification measures. Identification testing may be limited for botanical blends (see section 6.3)
Flavors/ Colorants	Organoleptic, Density, Refractive Index	Reference materials for flavors and colorants are typically not available. In this case the physical characteristics of the material will be used for identification.
Triturates/ Pure material blends	Pure material identified with strength evaluation. FTIR or USP wet chemistry for carrier identification.	Pure materials presented on carriers. Both the pure material and carrier should be confirmed if possible.

6.3.3 Identification by Chromatographic Retention Time and Spectral Match

1. Identification by a single chromatographic retention time may be used for both components and finished batches. For components, the use of

both retention time and/ or spectral match may be used as the sole source of identification. Typical acceptable range for spectral match is ≥ 900. Spectral matching for individual components on finished batches may be difficult as the finished batch usually consists of several components.

6.3.4 Identification by Spectroscopy

1. Spectroscopy techniques for identification (i.e. FTIR, or Raman) are good sources of identification for pure materials; however, may not be adequate for botanicals, blends and mixtures. For example, the unique component(s) of many botanical ingredients are present in low concentration, and as a result, the botanical may not be uniquely identifiable by spectroscopic means. In some cases, it may be possible to subtract the background spectrum and generate a spectrum that is unique to the blend. However, in general, caution should be taken when using Spectroscopy for identification of blends and mixtures.

6.3.5 Reference Materials for Identification

1. Qualified reference materials should used to establish the identity of all components and finished batches. Qualified reference materials include compendial standards, in-house qualified or commercially available secondary standards (typically qualified against compendial standards), and botanical reference materials. Reference materials are typically accompanied by a C of A that has an established potency, expiration date, or genus/ species identification for botanicals.

6.3.6 Identification Limitations

1. There are physical / chemical limitations to identification testing for some materials / products. For example, proprietary blends of ingredients may not uniquely identifiable by spectral or chemical analyses. For raw materials that are comprised of a blend of multiple components, identification may be carried out by marker testing. For example, a blend of multiple botanical ingredients may be identified using TLC for one or more of those ingredients.

2. For any component in which reference material is unavailable, organoleptic (taste, odor, color) in conjuction with any other physical characteristics (density, refractive index, pH) may be used to establish identity.

6.4 Purity – Microbiological Tests

6.4.1 Microbiological Limits

1. Microbiological limits must be considered for all products and materials; however, microbiological testing is not required for all materials or all products. Physical factors of the material / product may greatly reduce the risk of microbiological contamination. For example, materials / products with low pH or low water activity may have a very low risk and may not require microbiological testing.

2. By default, Ion Labs uses guidance from the USP and FDA to establish microbiological limits based on the material source and use. Specifically:

6.4.1.2.1 For the Drug Product use class – USP ⟨1111⟩ Microbiological examination of nonsterile products: Acceptance criteria for pharmaceutical preparations and substances for pharmaceutical use

6.4.1.2.2 For Dietary Supplements – USP ⟨2023⟩ Microbiological attributes of nonsterile nutritional and dietary supplements

6.4.1.2.3 For Cosmetics and Food, - Bacteriological Analytical Manual (BAM), 8th Edition, Revision A, 1998. Chapter 23

6.4.2 Interpretation of USP Microbiological Limits

1. The USP acceptance criterion for microbiological quality as it pertains to quantitative analyses has an allowable variability of the final colony forming units (CFU). There is a two-fold tolerance in the final results. For example, if the monograph requires a 100 cfu/ml limit, the acceptable upper limit would be 200 cfu/ml. Additional information is included in the "Interpretation of the Results" section of USP <61>.

2. When an acceptance criterion for microbiological quality is prescribed, it is interpreted as follows:

6.4.2.2.1 10^1 cfu: maximum acceptable count = 20;

6.4.2.2.2 10^2 cfu: maximum acceptable count = 200;

6.4.2.2.3 10^3 cfu: maximum acceptable count = 2000;

6.4.2.2.4 and so forth.

3. Ion Labs specifications should factor this variability into our specification and list the specification with the two-fold tolerance already included.

6.4.3 Water Activity and Microbiological Reduced Testing

1. Low water activity (a_w) in a material or product will greatly assist in the prevention of microbial proliferation. Because the water activity requirements for different Gram-reactive bacteria, bacterial spores, yeasts, and molds are well described in literature, the appropriate microbial limit testing program for products of differing water activities can be established. Reduced microbial limits testing may be justified through risk assessment. This reduction in testing, when justified, may entail forgoing full microbial limits testing, implementing skip-lot testing, or eliminating routine testing. Table 1 in USP <1112> provides a list of "Water Activity (a_w) required to Support the Growth of Representative Microorganisms."

2. Water activities below or equal to 0.60 are less than the required a_w for every microorganism in USP <1112> Table 1. As such, if a_w for a material or product is < 0.60, then reduced testing may be considered.

6.5 Purity – Heavy Metals

6.5.1 There are specific requirements for metals content based on the product Use Class as follows:

1. Drug Products – USP <232>

2. Dietary Supplements – USP <2232>

3. Food / Cosmetics – No general requirements, but there may be specific requirements for specific items (i.e. water, fish, etc.)

6.5.2 In addition, specific requirements for heavy metals should be considered for variable markets, i.e. Prop 65 (California) and Canada.

6.5.3 Although evaluation of heavy metals may not be required for certain product classifications, any raw material or finished good may be evaluated for heavy metals as deemed necessary. For Dietary Supplements, the four elements defined in Prop 65, lead, arsenic, cadmium, and mercury, will be the default elements for testing.

6.6 Strength / Assay

6.6.1 Strength/Assay testing of raw material components provides valuable information as to the suitability of that raw material for use in drug product. For raw materials used in dietary supplements, strength testing is generally performed on the first three lots of a new raw material, and once annually thereafter. For finished goods strength testing is typically evaluated if the component is part of a label claim or requested by the client. Additional details are provided in Section 6.8.

6.7 Physical Characteristics / Composition

6.7.1 The physical characteristics of both raw materials and finished products are critical parameters as to the identification and correct composition of said materials. Physical characteristics and Composition testing include: FTIR, Appearance, Form, LOD (loss on drying), KF (Karl Fisher), pH, etc. Typically physical characteristics of a raw material or finished product, such as appearance, are evaluated on every lot. Composition testing such as LOD or KF are only determined on full test lots of raw materials. These tests may be removed during reduced testing evaluations. Additional details are provided in Section 6.8.

6.7.2 In addition, outside of normal release testing, Content Uniformity (CU) for any tablet or capsule may be performed to establish uniform composition of any product. CU testing is not a release requirement and will be a protocol driven evaluation.

6.8 Alert Limits

6.8.1 In place of a defined specification, some analytical testing may have an "alert" limit. These limits are in place only to alert appropriate departments of a potential impact from the observed result. These limits are not a pass/ fail.

6.8.2 Some examples would be heavy metals, particle size or density evaluation of a raw material. Most raw material ID's are used in multiple products, therefore, heavy metals, particle size or density requirements could potentially be different for each product.

6.8.3 When a test result observed exceeds an alert limit, the QC lab will initiate Form D-902-F1 Alert Limit Impact Assessment, and route to the appropriate personnel to conduct the impact assessment.

6.8.4 This impact assessment should include:

1. An understanding of which product this material will be used. This information typically will be provided by purchasing.

2. What, if any, negative impact may occur from the use of this material.

3. Approval for use signatures from all associated departments.

6.8.5 The completed Impact Assessment will be archived with the raw material release packet if applicable.

6.9 Default Testing Based on Use Class

6.9.1 The tables provided in this section provide a summary of default testing based on the information provided in this SOP. These tables provide typical defaults for establishing specifications, but the final specification for each individual component, raw material, or product must reasonably ensure the identity, strength, composition, and purity of finished products manufactured by Ion Labs, Inc.

Drug

Table 1 – Drug Default Testing				
	RM Release	RM CoA Challenge	FP Release	FP Stability
Identification	USP[2]		USP[2]	Not required.
Purity – Microbiological[1]	Same as RM CoA Challenge. After Challenge lots, if a_w < 0.60 (see USP <1112>) then only test a_w	USP[2]. Also reference USP <1111> Generally Nonaqueous preparations for oral use • TAMC NMT 2000 • TYMC NMT 200 • Absence of E. coli in 10 g Aqueous preparations for oral use • TAMC NMT 200 • TYMC NMT 20 • Absence of E. coli in 10 g Test a_w – Report Value. Based on results test less at release.	Same as Stability.	USP[2]. Also reference USP <1111> Generally Nonaqueous preparations for oral use • TAMC NMT 2000 • TYMC NMT 200 • Absence of E. coli in 10 g Aqueous preparations for oral use • TAMC NMT 200 • TYMC NMT 20 • Absence of E. coli in 10 g
Purity – Heavy Metals	Not Required unless Risk Assessment requires monitoring for FP compliance with USP <232>	Required unless Risk Assessment Determines that control of RM is not necessary	Conduct a Risk Assessment (RA) of the 24 elements listed in USP <232>. Based on RA, determine if RM must be monitored. If RM are monitored, FP testing is not required.If RM are not monitored, typically test one lot per year (i.e. Stability Lot).	Not Required
Strength / Assay	USP[2]		USP[2]	
Composition – Content Uniformity	N/A	N/A	USP[2]	Not Required
Physical Characteristics / Composition	Only include testing form the RM CoA Challenge testing that are likely to change during shipment.	USP[2]	USP[2]	

Note: [1]Limits placed in the Ion Labs specification for Microbiological purity are double the values listed in source references based on discussion in section 6.4.

[2]USP – as used here implies Full USP Monograph or other compendia source as available for the material or product.

Dietary Supplement

Table 2 – Dietary Supplement Default Testing

	RM Release	RM CoA Challenge	FP Release	FP Stability
Identification	Use the most robust form of ID available. Typical testing includes • HPLC • TLC – Botanical, Botanical Extracts • FTIR or Raman – Fine Chemicals, pure materials • Organoleptic (Color, form, Odor) - Flavors		• Organoleptic • • Retention Time Match	Not required.
Purity – Microbiological[1]	Same as RM CoA Challenge. After Challenge lots, if a_w < 0.60 (see USP <1112>) then only test a_w	USP <2023> Generally • TAMC NMT 2000 • TYMC NMT 200 • Absence of E. coli in 10 g Botanicals • USP <2023> see specific definitions Test a_w – Report Value. Based on results test less at release.	Same as Stability.	USP <2023> Generally • TAMC NMT 2000 • TYMC NMT 200 • Absence of E. coli in 10 g Botanicals • USP <2023> see specific definitions
Purity – Heavy Metals	Not Required	USP <2232> (µg/g) • As 1.5 • Cd 0.5 • Pb 0.5 • Hg total • Methyl HG 0.2	USP <2232> PDE (µg/day) • As 15 • Cd 5 • Pb 5 • Hg total Methyl HG 2	Not Required
Strength / Assay	Typically not Required	Test for strength if the component is the source of a label claim on the product.	Test each component that has a label claim. If not possible to test, use IAV calculation on release	
Physical Characteristics / Composition	Typically not Required	As applicable • Organoleptic evaluation • Bulk Density • Tapped Density • pH • LOD	• Same as stability testing; however some testing may be reduced based on supporting stability and/or historical release data.	As applicable and if needed to support • Organoleptic evaluation • Disintegration or Dissolution • Bulk Density • Tapped Density • Hardness • Friability • pH

Note: [1]Limits placed in the Ion Labs specification for Microbiological purity are double the values listed in source references based on discussion in section 6.4.

Cosmetic

Table 3 – Cosmetics Default Testing				
	RM Release	RM CoA Challenge	FP Release	FP Stability
Identification	Use at least one ID test. Typical ID testing: • FTIR or Raman > 0.90 compared to Product Blend Std • Organoleptic (Color, form, Odor)		Use at least one ID test. Typical ID testing: • FTIR or Raman > 0.90 compared to Product Blend Std • Organoleptic	Not required.
Purity – Microbiological[1]	Same as RM CoA Challenge. After Challenge lots, if a_w < 0.60 (see USP <1112>) then only test a_w	Generally[2,3] • TAMC NMT 2000 • TYMC NMT 200 • Absence of pathogenic organisms Used near Eyes[2,3] • TAMC NMT 1000 • TYMC NMT 100 • Absence of pathogenic organisms Test a_w – Report Value. Based on results test less at release.	Same as Stability.	Generally[2,3] • TAMC NMT 2000 • TYMC NMT 200 • Absence of pathogenic organisms Used near Eyes[2,3] • TAMC NMT 1000 • TYMC NMT 100 • Absence of pathogenic organisms
Purity – Heavy Metals	Not Required unless Risk Assessment requires monitoring for FP compliance with USP <232>	Required unless Risk Assessment Determines that control of RM is not necessary	Conduct a Risk Assessment (RA) of the elements listed in USP <2232>. Based on RA, determine if RM must be monitored. If RM are monitored, FP testing is not required.If RM are not monitored, typically test one lot per year (i.e. Stability Lot).	Not Required
Strength / Assay	Not Required	Not Required	Not Required	Not Required
Physical Characteristics / Composition	Not Required	Not Required	pH	pH

Note: [1]Limits placed in the Ion Labs specification for Microbiological purity are double the values listed in source references based on discussion in section 6.4.
[2]Bacteriological Analytical Manual, 8th Edition, Revision A, 1998. Chapter 23
[3]For eye area products, it is recommended to decrease the limits listed here by one half.

Food

Table 3 – Food Default Testing				
	RM Release	RM CoA Challenge	FP Release	FP Stability
Identification	• Organoleptic (Color, form, Odor)		Not Required	Not required.
Purity – Microbiological[1]	Same as RM CoA Challenge. After Challenge lots, if a_w < 0.60 (see USP <1112>) then only test a_w	Generally[2] • TAMC NMT 2000 • TYMC NMT 200 • Absence of pathogenic organisms Test a_w – Report Value. Based on results test less at release.	Same as Stability.	Generally[2] • TAMC NMT 2000 • TYMC NMT 200 • Absence of pathogenic organisms
Purity – Heavy Metals	Not Required	Not Required	Not Required	Not Required
Strength / Assay	Not Required	Not Required	Not Required	Not Required
Physical Characteristics / Composition	Not Required	Not Required	Not Required	Not Required

Note: [1]Limits placed in the Ion Labs specification for Microbiological purity are double the values listed in source references based on discussion in section 6.4.
[2]Bacteriological Analytical Manual, 8th Edition, Revision A, 1998. Chapter 23

7.0 Revision History

Revision	Date	Description of Changes	CCR #	By
0	06/26/19	New	N/A	J. Sassman
1	07/16/21	Added section for alert limits.	CC-21-0284	J. Sassman

Material Information

Material Name		Lot Number	
Test Description		Test Date	
Alert Limit		Sample Result	
Impacted Department (s)			
Completed By/ Date:			

Department Notification

Department			
Received By/ Date:			
Impacted Product		Lot Number (s)	
Impact Assessment			
Approved/ Rejected for use:			
Completed By/ Date:			

Approval for Use

Departmental Approval/ Date:	
QC Lab Approval/ Date:	