The Essentials of the Global Recycled Standard

Part 2: Achieving Zero Discharge

TextileExchange

The Essentials of Global Recycled Standard (GRS): A Two-Part Series

Part 1: What is Recycled? I Weds. August 8th 10-11am EST/4-5pm CEST

Part 2: Achieving Zero Discharge I Tues. August 28th 10-11am EST/4-5pm CEST

Global Recycled Standard

NSF

Last year, Recycled Claim Standard 2.0 and Global Recycled Standard (GRS) 4.0 were released. As of July 2018, all sites should be compliant with the new standards. The most significant changes in the standard are:

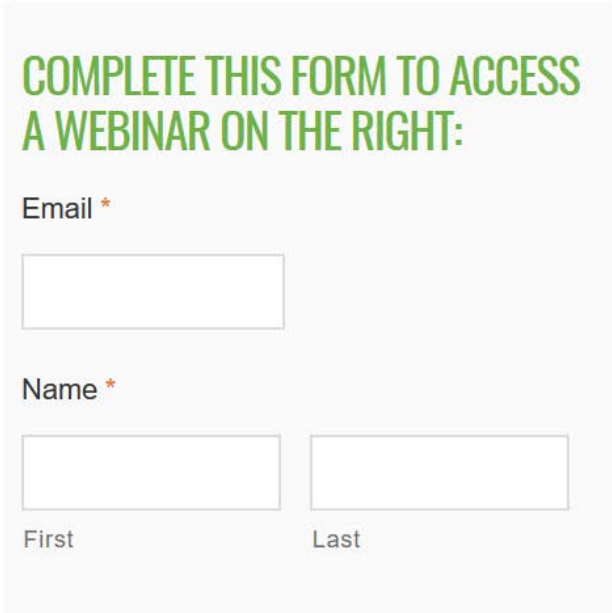
1) How materials are verified as recycled and

2) Our adoption of ZDHC's Manufacturer's Restricted Substance List

This two–part series will take a deeper look at these two areas to explain how they work, and how they are driving change across the textile industry and beyond. Part 2 will be led by Textile Exchange's Lee Tyler, Annie Labut, Managing Toxicologist from NSF International and Scott Echols from ZDHC.

• Updates to Processing Criteria of GRS • What is the MRSL? • How to reach compliance? • Q&A

PART 1 Recording



www.TextileExchange.org

1. *"Resources"*
2. *"Webinar Archives"*
3. *Complete the form to access "The Essentials of the Global Recycled Standard – Part One: What is Recycled"*

http://textileexchange.org/webinar-archives/

Today's Speakers:

- **Lee Tyler** | Senior Manager of Standards Assurance | **Textile Exchange**
- **Scott Echols** | ZDHC Roadmap to Zero Programme Director | **ZDHC**
- **Jeff Wilson** | Sr. Business Development Manager, Sustainability | **NSF International**
- **Annie Labut** | Managing Toxicologist, Safer Chemistry | **NSF International**

ABOUT US

Founded 15 years ago, Textile Exchange is a global **non-profit** with more than 260 members that represent leading brands, retailers and suppliers in the textile industry. The organization works to create leaders in the **sustainable** fiber and materials sector by providing learning opportunities, tools, insight, standards, data, measurement and benchmarking—and by building a **community** that can collectively accomplish what no individual or company can do alone.

OUR MISSION

Textile Exchange **inspires and equips people to accelerate sustainable practices** in the textile value chain. We focus on minimizing the harmful impacts of the global textile industry and maximizing its positive effects.

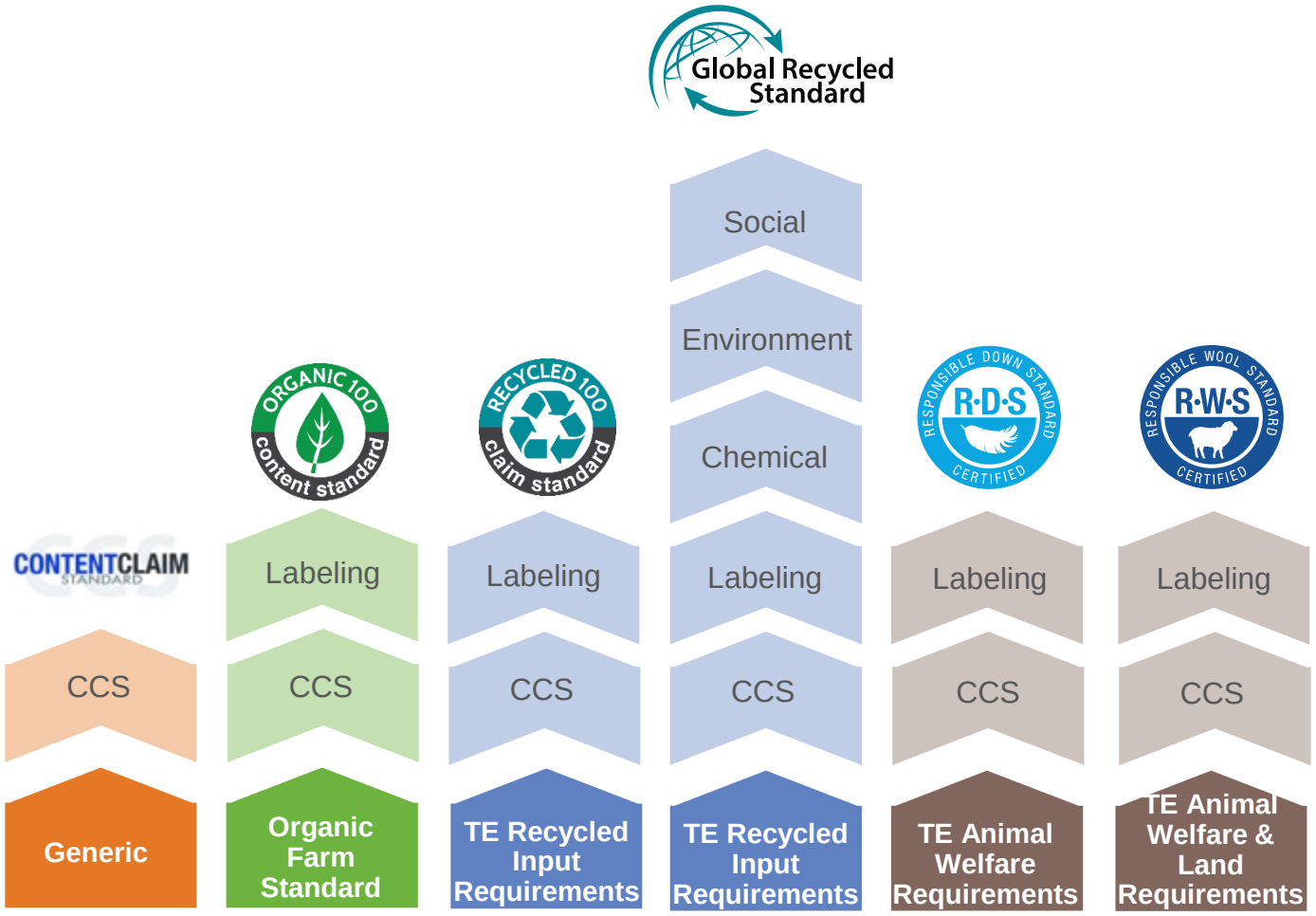
OUR VISION

We envision a global textile industry that protects and restores the environment and enhances lives.

AGENDA

1. The Global Recycled Standard
2. GRS 4.0 Updates
3. ZDHC’s Manufacturer’s Restricted Substance List
4. How is chemical use verified?

TEXTILE EXCHANGE STANDARDS



TEXTILE EXCHANGE STANDARDS

- Verify recycled material.
- Identify pre-consumer or post-consumer identity.
- Provide robust chain of custody from source to final product.

Global Recycled Standard

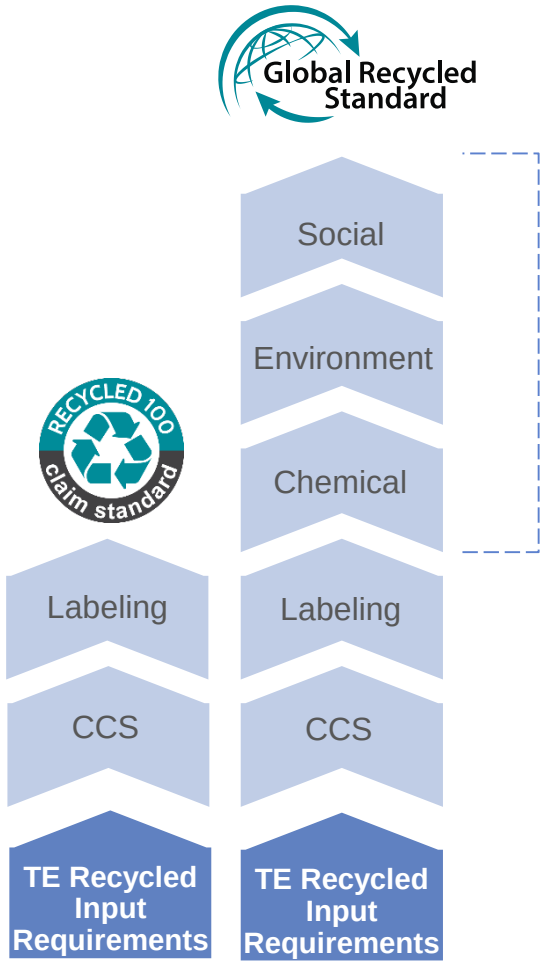
- Verify recycled material.
- Identify pre-consumer or post-consumer identity.
- Provide robust chain of custody from source to final product.
- Ensure responsible social, environmental, and chemical management.

Processing Requirements

- Facility-based
- Product Based

Facility-based

TEXTILE EXCHANGE STANDARDS



SOCIAL CRITERIA

- GSCP Social Reference Code
- International Labor Organization Conventions
- Policy Management and Record Keeping
- Forced Labor, Child Labor
- Freedom of Association
- Discrimination
- Health and Safety
- Wages, Terms of Employment, Working Hours

ENVIRONMENTAL CRITERIA

- GSCP Environmental Code used as a reference
- Environmental & *Chemical Management*, Record Keeping
- Monitor and Improve
  - Energy Use
  - Water Use
  - Wastewater / Effluent *(updated the wastewater parameter limits based on ZDHC)*
  - Emissions to Air
  - Waste Management

Product-based

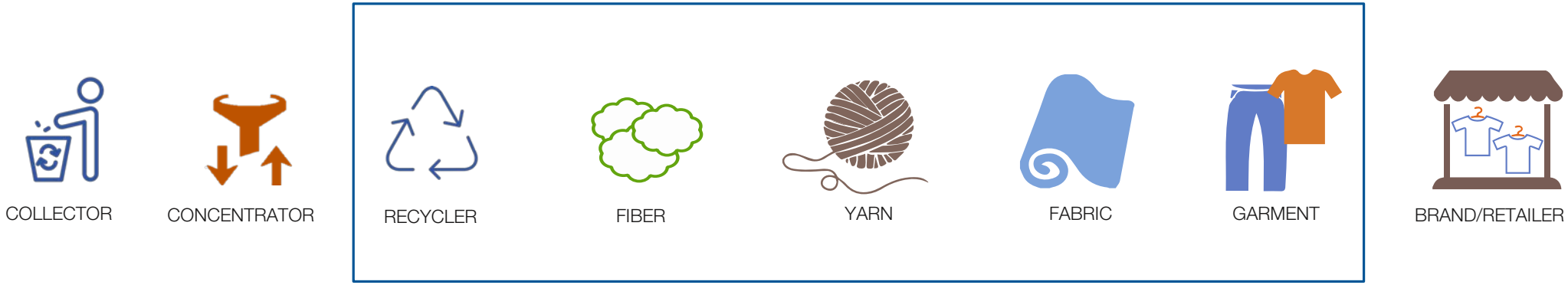
CHEMICAL REQUIREMENTS

- Chemicals **used for *processing*** in GRS products.

- Need to have an **SDS** for all chemical substances purchased.

- Three different ways that a substance may be prohibited:
  - **Hazard Code**
  - **REACH**
  - **ZDHC MRSL**

RCS & GRS SCOPE



NEWLY REVISED VERSIONS

The following changes only apply to Global Recycled Standard 4.0:

- Updated Wastewater Parameter Limits to be in line with Foundational ZDHC.
- We have adopted ZDHC's Manufacturers Restricted Substance List to at least comply with level 1.

The ZDHC Roadmap to Zero Programme MRSL for GRS

August 2018

ZDHC

Signatory Brands:

adidas · BURBERRY LONDON ENGLAND · C&A · coop · ESPRIT · F&F · Gap Inc. · G-STAR RAW · H&M · HUGO BOSS · INDITEX · Jack Wolfskin

KERING · Lbrands · LEVI STRAUSS & CO. · LI-NING · MARKS & SPENCER · New Balance · Nike · PRIMARK · PUMA · PVH · TARGET · UNITED COLORS OF BENETTON

Value Chain Affiliates:

C.S Textiles · A&E Innovate. Create. Deliver. · ADEC INNOVATIONS ESG SOLUTIONS · Albini GROUP · Arvind FASHIONING POSSIBILITIES · Birla Cellulose · BRACHI TESTING SERVICES · BSI · Britacel · BUREAU VERITAS · Ciel Textile · COATS · Color Rave · covestro · CTI · DR. PETRY TEXTILE AUXILIARIES

eurofins · Everlight Chemical · FIDI FITI Testing & Research Institute · EGL International · Fórmula · GEO CHEM CPS · hansecentral Hermes · ICEC · intertek Total Quality. Assured. · We Colorized · ISKO · ITALIAN LEATHER RESEARCH INSTITUTE · JAY Chemical Industries Limited · JINHPAO

JINTEX · BERNSTEIN · KINGDOM · LANXESS Energizing Chemistry · Lenzing Innovative by nature · Lonsen 龙盛染料 · MAS CHANGE IS COURAGE · MTS · Nahar · NICCA · PantaRei water solutions · Pidilite · PolyOne · PrimeAsia

PROCESS FACTORY · raymond UCO Denim Private Limited · RSE · RITEX laboratorio ricerca e analisi tessili · ROSSARI making you more competitive · RUNTU润土 · S&D CHEMICALS · SCISKY 水性科天 · SDS SUSTAINABLE DOWN SOURCE · SALIRONE · SANTORI · Sensitive EUROJERSEY · SGS · SIAM PRO · smit zoon

stahl · 台界化学 TAIWAN SURFACTANT · TESTEX · TFL · Transfar 传化化工 · trueway · TÜVRheinland · TÜV SÜD · UL · yorkshire

Associates:

amfori BEPI Trade with purpose · AQC · BSI · C&A Foundation · CTIC 中国纺织信息中心 · ETAD Working together for safer colorants · GermanFashion Modeverband Deutschland e.V. · ITRI Industrial Technology Research Institute · OEKO-TEX® CONFIDENCE IN TEXTILES

Seri.co · SIWI · Sustainable Apparel Coalition · Taiwan Textile Federation 纺拓会 · TEGEWA · UNIC Italian Tanners' Association · UNPAC unione nazionale produttori italiani ausiliari conciari

The ZDHC Foundation
Programme, Academy, HUB

The Roadmap to Zero Programme

Developing guidelines and tools for the industry

ZDHC Academy™

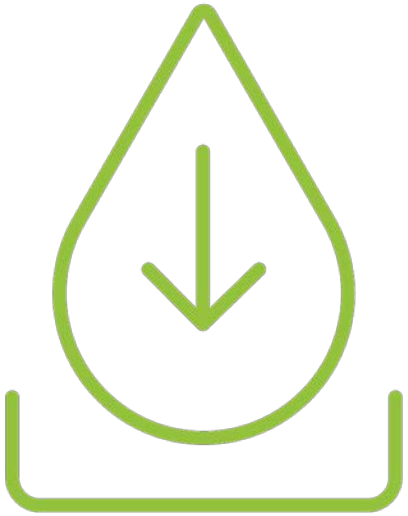
Building capacity of the value chains

The ZDHC Implementation HUB

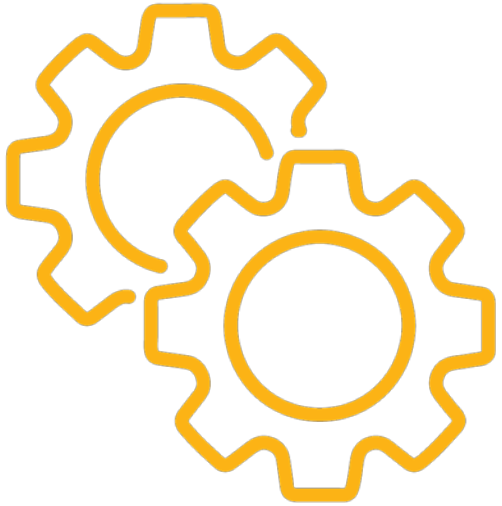
Scaling adoption and innovation

A holistic systems approach
to Sustainable Chemical Management

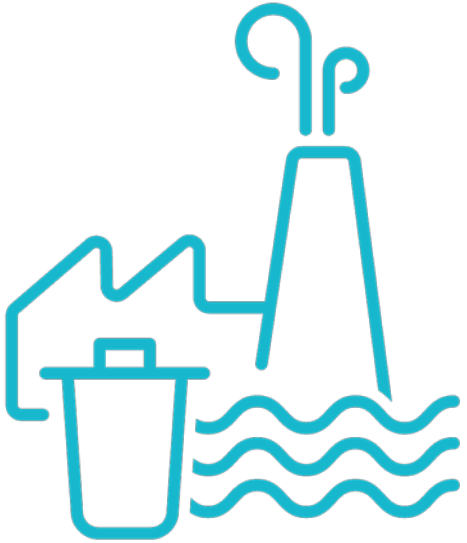
INPUT



PROCESS



OUTPUT



ZDHC MRSL Version 1.1
ZDHC MRSL Conformance Guidance

What is the ZDHC MRSL?

- **List of chemical substances banned from intentional use in facility**
- Establishes concentrations limits
- Coverage: textile, synthetic leather, leather
- ZDHC MRSL is aspirational, but achievable to adopt
- Alternatives already available for compounds on ZDHC MRSL

What is the ZDHC MRSL Conformance Guidance?

- Gives chemical suppliers a system to assess the extent to which a chemical formulation conforms to the ZDHC MRSL
- Uses existing third-party certification systems to give an indication of conformance
- Describes the criteria that third-party certification systems and testing laboratories must meet in order to be accepted by ZDHC as an indicator of MRSL conformance

Standard for management of input chemistry
ZDHC MRSL / version 1.1

- **Proactive chemicals management in supply chain**
- **Starting point for safer chemistry innovation**

Chapter 1 MRSL for Textiles and Coated Fabrics Processing

Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers

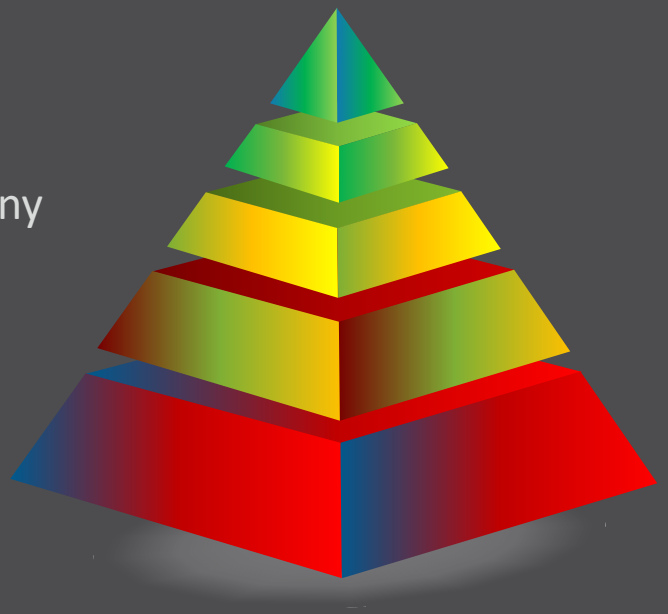
Potential Uses in Apparel and Footwear Textile Processing
APEOs can be used as or found in: detergents, scouring agents, spinning oils, wetting agents, softeners, emulsifier/dispersing agents for dyes and prints, impregnating agents, de- gumming for silk production, dyes and pigment preparations, polyester padding and down/feather fillings.

General Techniques for Analysing Chemicals
Liquid chromatography- mass spectrometry (LC-MS), gas chromatography-mass spectrometry (GC-MS)

CASNO	Substance	Group A: Raw Material and Finished Product Supplier Guidance	Group B: Chemical Supplier Commercial Formulation Limit
104-40-5 11066-49-2 25154-52-3 84852-15-3	Nonylphenol (NP), mixed isomers	No intentional use	250 ppm
140-66-9 1806-26-4 27193-28-8	Octylphenol (OP), mixed isomers	No intentional use	250 ppm
9002-93-1 9036-19-5 68987-90-6	Octylphenol ethoxylates (OPEO)	No intentional use	500 ppm
9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	Nonylphenol ethoxylates (NPEO)	No intentional use	500 ppm

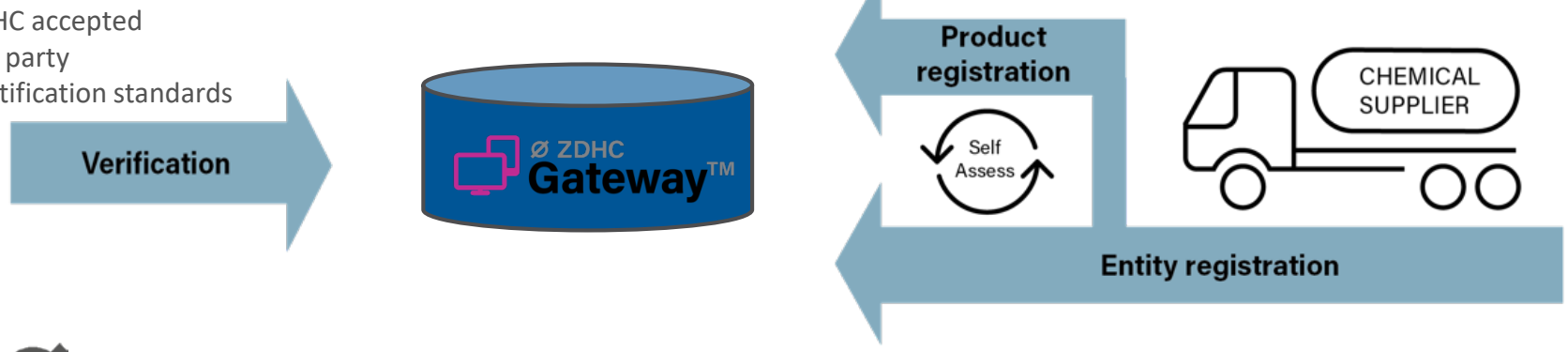
We Trust…

Formulators add data about their company and products.



- Level 3
- Level 2
- Level 1
- Level 0

ZDHC accepted
3rd party
Certification standards



.. but Verify

ZDHC verifies this information with relevant Certification Companies.

ZDHC accepted 3rd party certification standards to date

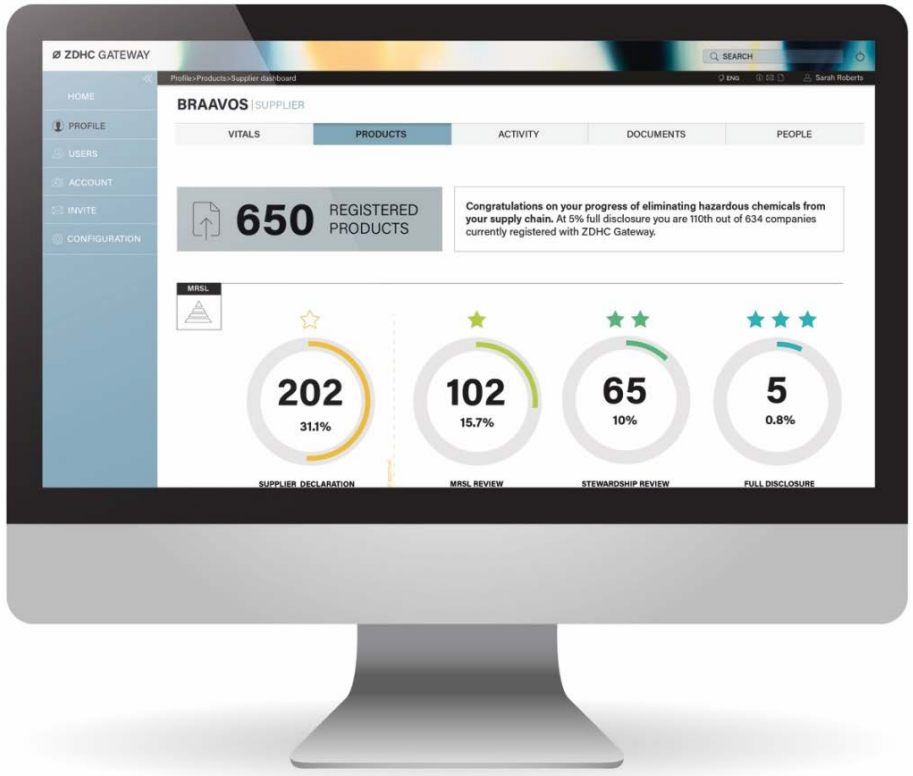
- BLC Chem-MAP as Level 1 and 3 indicator
- bluesign® bluefinder as Level 3 indicator
- Clean Production Action's (CPA) GreenScreen Certified™ Standard for Textile Chemicals as Level 1 indicator
- Control Union as Level 1, 2 and 3 indicator
- ECO PASSPORT by OEKO-TEX® Programme as Level 1 and 3 indicator
- Global Organic Textile Standard (GOTS) as Level 1 indicator
- NimkarTek Detox Laboratory (NDL) as Level 1 indicator
- NSF International as Level 1 indicator
- SciveraLENS® as Level 1 indicator
- ToxServices' Full Materials Disclosure Screened Chemistry™ (ToxFMD®) Program as Level 1 indicator
- TÜV Rheinland as Level 1 testing indicator

The levels are indicators for chemical formulations conforming to ZDHC MRSL v1.1

ZDHC Gateway – Chemical Module

The world's first open database of safer chemistry for the textile, apparel, leather and footwear industry

Chemical Suppliers provide confidence to customers by listing chemical product and company information in a verified, central database.



August 28, 2018

ZERO DISCHARGE OF HAZARDOUS CHEMICALS (ZDHC)

Manufacturing Restricted Substances List (MRSL)

Level 1 Conformance

NSF INTERNATIONAL
789 N. Dixboro Road
Ann Arbor, Michigan 48105 USA

OUR MISSION

NSF International is dedicated to being the leading global provider of public health and safety-based risk management solutions while serving the interests of all stakeholders.

NSF is a service provider to thousands of organizations in 175+ countries

WHY NSF ZDHC LEVEL 1 CONFORMANCE IS A PERFECT FIT

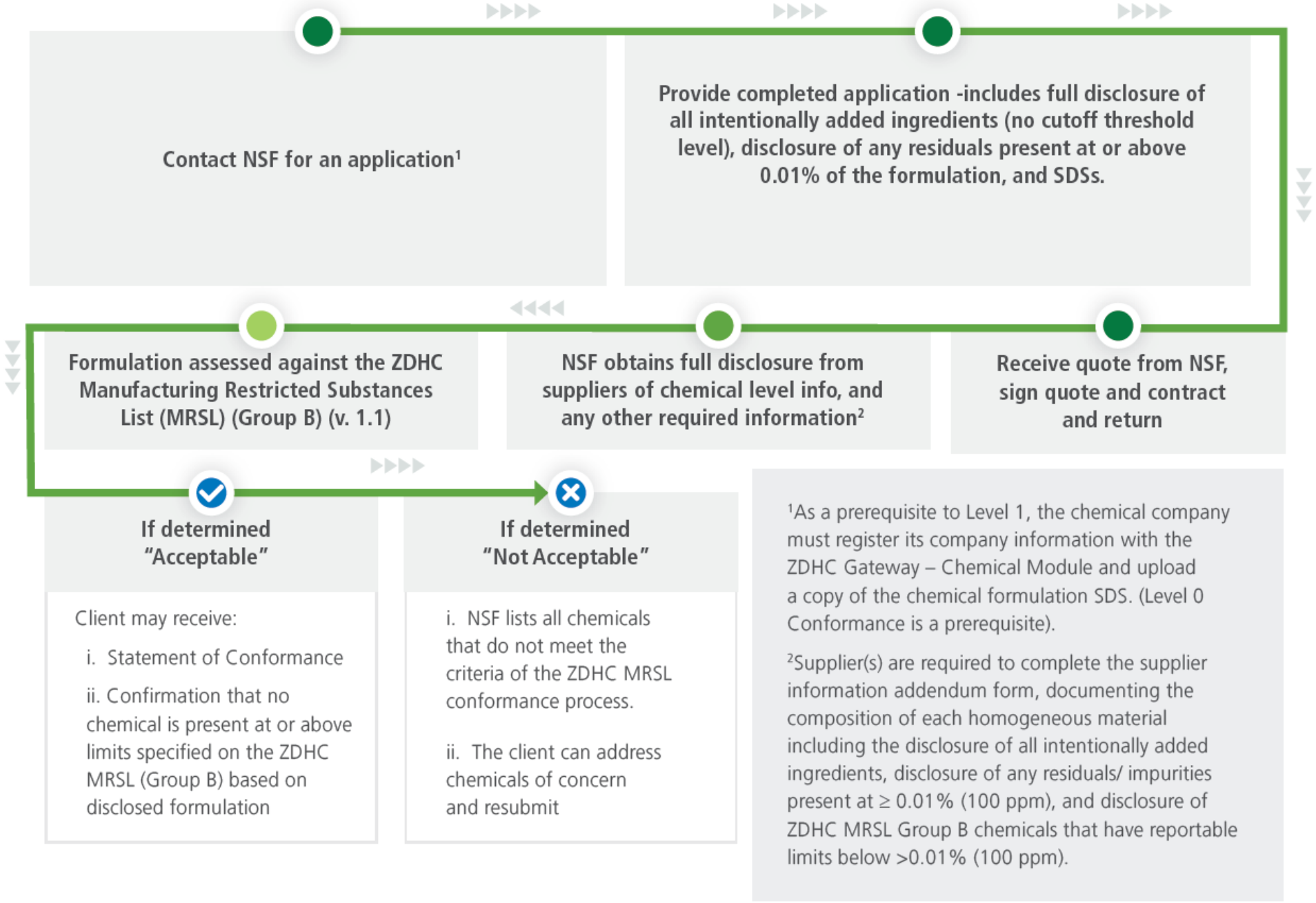
Over 100,000 products evaluated by NSF professionals

Expertise in toxicology, regulatory compliance, chemistry, biochemistry, environmental chemistry, microbiology, industrial hygiene and engineering

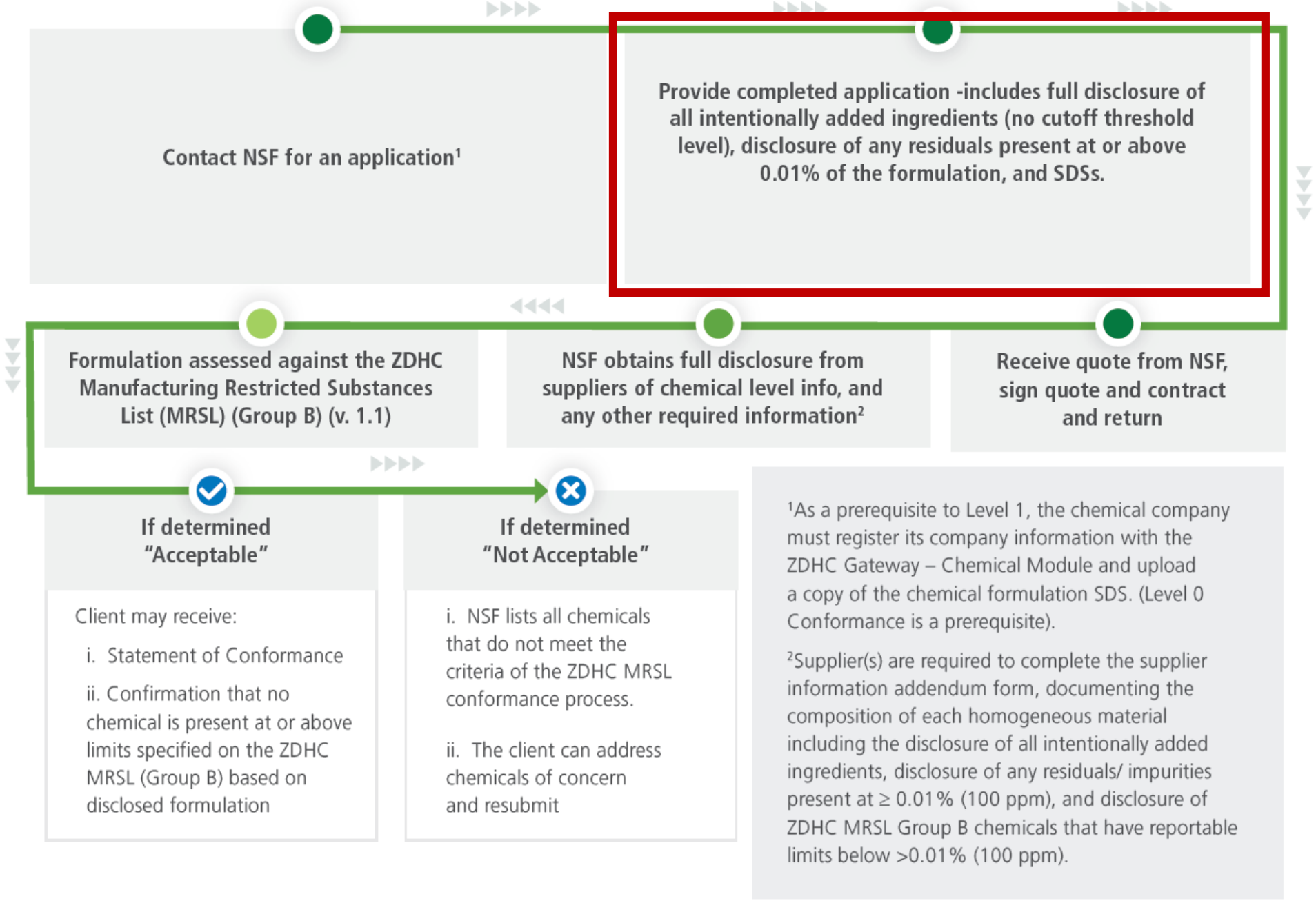
Third-party testing to support over 80 NSF/ANSI certification programs, including EPA Safer Choice, CleanGredients®, Green Screen® and ToxFMD™

Demonstrate compliance with supplier demands without needing to divulge proprietary info.

ZDHC LEVEL ONE CONFORMANCE PROCESS



ZDHC LEVEL ONE CONFORMANCE PROCESS



SUBMITTING YOUR FORMULATION CORRECTLY EXPEDITES REVIEWS

							% Composition[7]			
CAS Number[1] (if disclosed on SDS)	Chemical Name[2]	Trade Name[3] (written on SDS)	Supplier Name (include alternate suppliers on separate row)[4]	Alternate Supplier? (Y/N)	Supplier Contact Information[5] (Name & Email)	Function/ Ingredient Class[6]	Pinpoint (specify %)	Low Range (specify %)	High Range (specify %)	SDS/ MSDS Attached?[8]

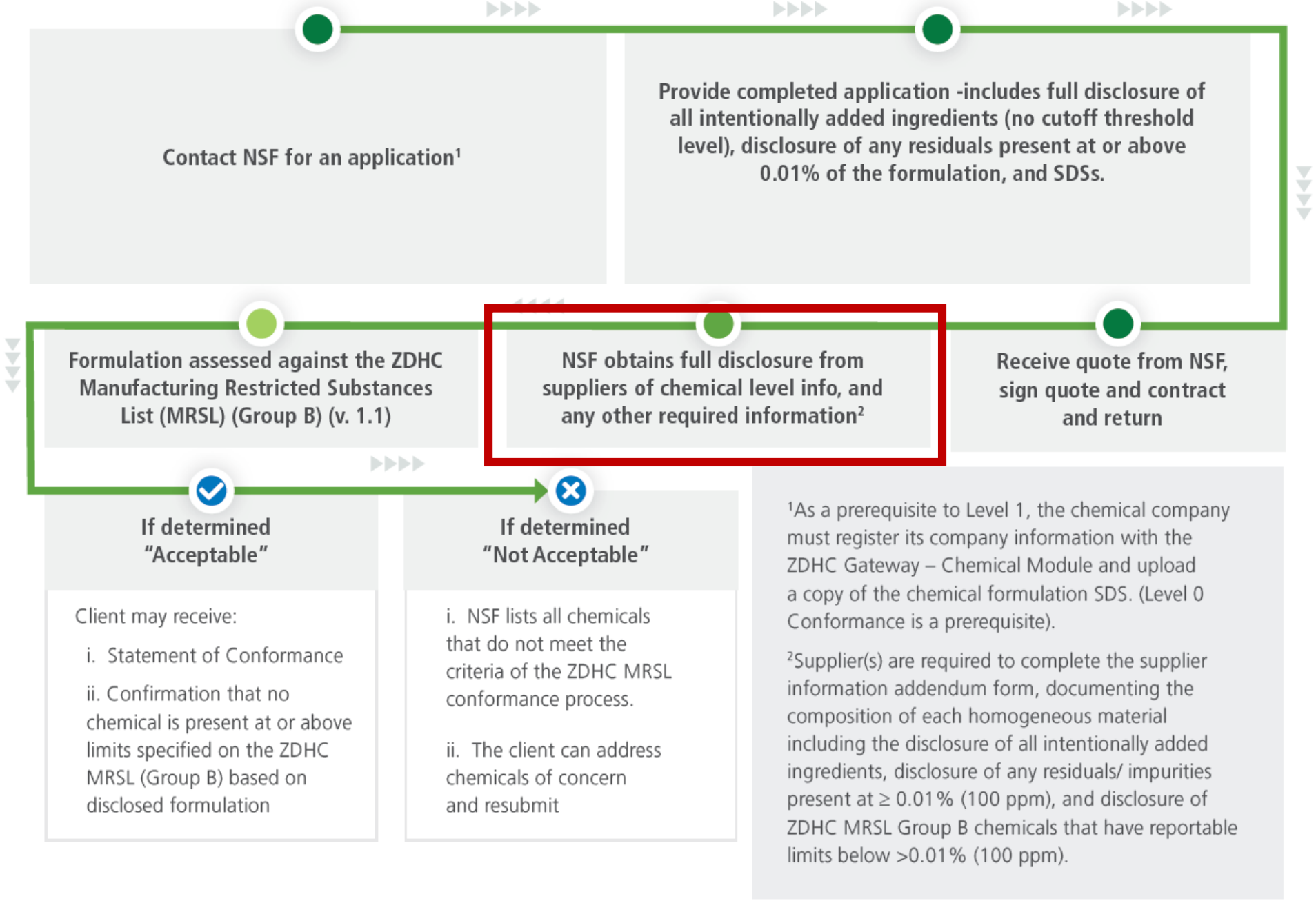
The **tradename** is the unique name and/or number of the ingredient as you buy it from the supplier. This can be found on the MSDS/SDS from the supplier. If the ingredient you are using has a trade name, enter it as **one line item** in your formulation and do not break it down into individual components.

The **supplier** is the company from whom you buy this ingredient. If you know that your supplier is a distributor, please write (D) after the distributor's name, and (M) after the manufacturer's name, if known.

Please provide a copy of the **MSDS/SDS** for each of the ingredients identified in the formulation.

Reach out to ask your **NSF project manager** questions at any time. We are here to help!

ZDHC LEVEL ONE CONFORMANCE PROCESS



NSF OBTAINS FULL DISCLOSURE FROM SUPPLIERS

The SDS can help identify commonly known hazardous ingredients.

Section 3: Composition / Information on Ingredients

Mixtures

Chemical name	CAS number	%
1-Methoxy-2-propanol	107-98-2	99.8
Butylated hydroxytoluene (BHT)	128-37-0	0.02

NSF OBTAINS FULL DISCLOSURE FROM SUPPLIERS

The SDS is not enough when there are unknown ingredients.

Section 3: Composition / Information on Ingredients		
Chemical Name	**CAS number**	**%**
Acrylic polymer(s)	Not Hazardous	49.0 – 51.0
Residual monomers	Not Required	< 500.0 PPM
Water	7732-18-5	49.0 – 51.0

3. COMPOSITION / INFORMATION ON INGREDIENTS

Product name	CAS Number	Amount
Proprietary Colorant Blend	Proprietary	100.0 %

NSF OBTAINS FULL DISCLOSURE FROM SUPPLIERS

Full formulation disclosure will be requested from your suppliers if the SDS is not sufficient.

Ingredients

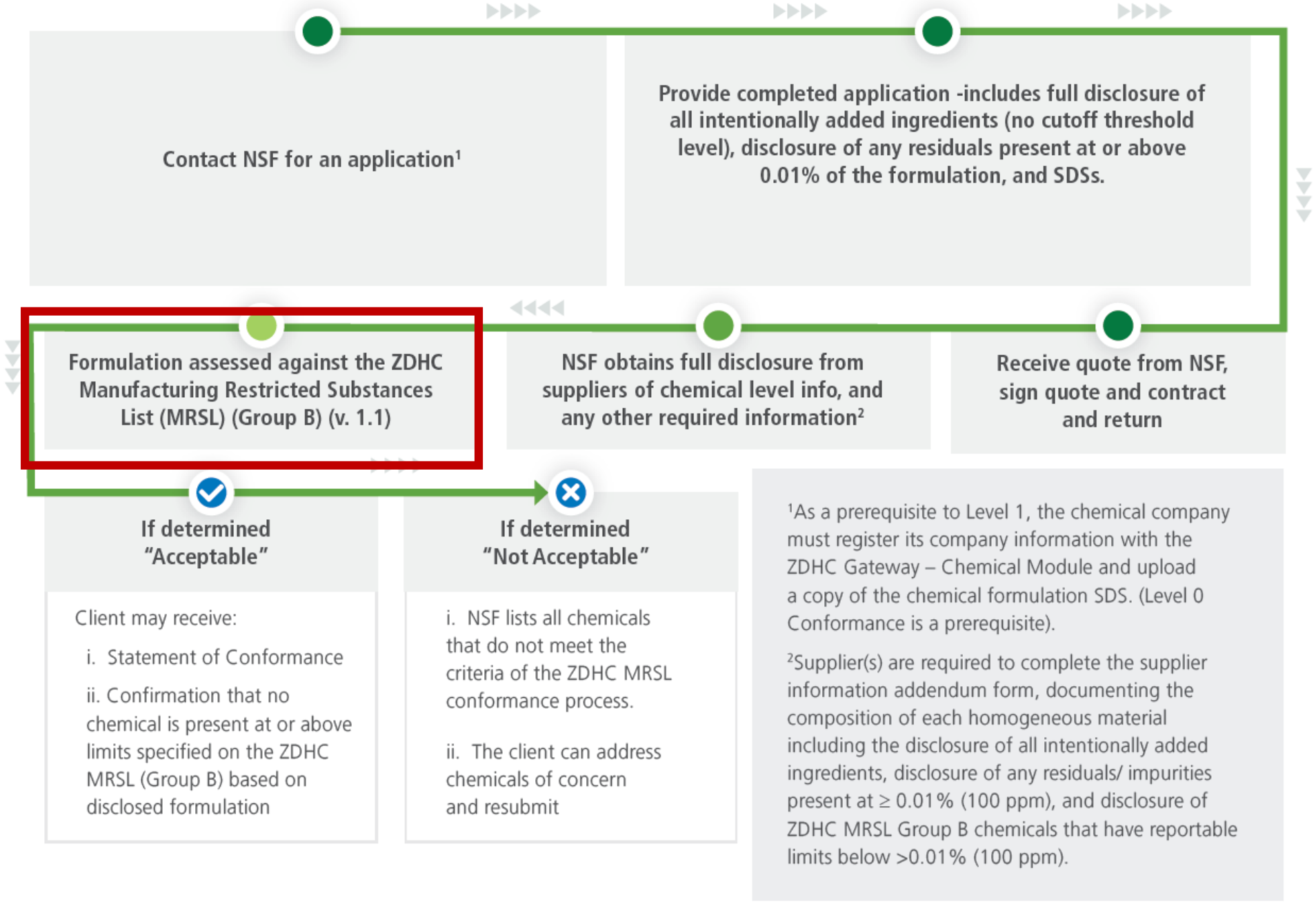
Chemical name	CAS-No. EC-No.	Weight %	Component Type
Dipropylene Glycol Butyl Ether	29911-28-2	>= 99.0 %	A

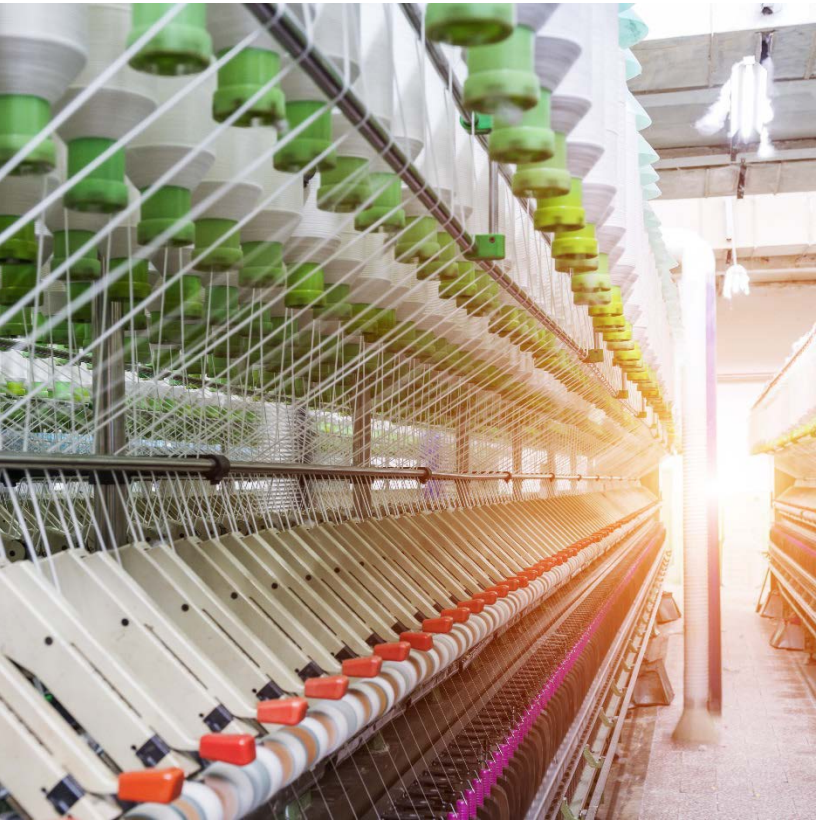
3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula HO - OH

Chemical name	CAS-No	Weight %
Hydrogen peroxide	7722-84-1	50
Water	7732-18-5	50

ZDHC LEVEL ONE CONFORMANCE PROCESS





For further information:

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Questions?

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