



ToxFMD[®] Screened Chemistry Scoring Overview

OCTOBER 2020

INTRODUCTION

The purpose of this document is to provide supplemental information to aid in the understanding of how a ToxFMD[®] Screened Chemistry Score is calculated.

Should you have any additional questions or comments about interpretation of your Formulation's Screened Chemistry Score or are interested in having your formulation reviewed under ToxServices' ToxFMD[®] Screened Chemistry Program, please contact ToxFMD Program Manager Kristi Benoy at kbenoy@toxservices.com.

Step 1: Full formulation disclosure is obtained from the manufacturer.

Full formulation is disclosed by manufacturer under a non-disclosure agreement with ToxServices.

Ingredients reviewed include: all intentionally added ingredients at any concentration, any impurities in finished formulation ≥ 100 ppm (0.01%), and any detectable impurities listed on ZDHC MRSL v. 2.0.

Step 2: Additional information is obtained from suppliers.

Any additional outreach for ingredient(s) obtained from proprietary suppliers may occur at this step.

Supplemental information is obtained for any polymers, surfactants, enzymes, and particulates.

Step 3: Ingredients are screened against the ZDHC MRSL v. 2.0.

All ingredients and impurities are checked against the ZDHC MRSL v. 2.0.

If any ingredient or impurity is present on the ZDHC MRSL above its MRSL limit, the formulation receives a designation of "ToxFMD[®] Not Acceptable".

Step 4: Each chemical in the formulation is searched for in the U.S. EPA SCIL.

U.S. EPA SCIL Full Green Circle chemicals receive a score of 35 points.

U.S. EPA SCIL Half Green Circle chemicals receive a score of 35 points.

U.S. EPA SCIL Yellow Triangle chemicals receive a score of 20 points.

Step 5: Non-SCIL listed intentionally added chemicals (other than polymers, dyes, and pigments) and non-SCIL listed enzymes are assessed using GreenScreen[®] criteria.

Benchmark 4 chemicals receive a score of 50 points.
Benchmark 3 chemicals receive a score of 40 points.

Benchmark 2 chemicals receive a score of 20 points.
Benchmark U chemicals receive a score of 15 points.

Benchmark 1 or LT-1 chemicals do not receive a score and the formulation receives an automatic score of 10 and designation as "ToxFMD[®] Not Acceptable".

Step 6: Polymers, Dyes/Pigments, and Residuals/Impurities are evaluated using the appropriate ToxFMD[®] Criteria based on the U.S. EPA Safer Choice functional class criteria.

ToxFMD[®] Acceptable chemicals receive a score of 35 points.

ToxFMD[®] Not Acceptable Low Priority chemicals receive a score of 20 points.

ToxFMD[®] Not Acceptable High Priority chemicals do not receive a score and the formulation receives an automatic score of 10 and designation as "ToxFMD[®] Not Acceptable".

Step 7: A weighted-average score is calculated for the formulation by multiplying each ingredient (or impurity) score by its concentration in finished formulation. All values are then summed for an overall Screened Chemistry Score for final formulation (rounded to one decimal point).

Preferred Finished Formulation (≥ 35 and ≤ 50) - "ToxFMD[®] Acceptable"; Certificate Earned

Acceptable Finished Formulation (>10 and < 35) - "ToxFMD[®] Acceptable"; Certificate Earned

Finished Formulation of Potential Concern (≥ 0 and ≤ 10) - "ToxFMD[®] Not Acceptable"; Certificate Not Earned

EXAMPLE 1: FORMULATION A

Chemical Name	Functional Class	Composition	ToxFMD® Criteria	Screened Chemistry Chemical Score	Weighted Screened Chemistry Chemical Score
Ingredient 1	Solvent	55%	U.S. EPA SCIL Full Green Circle	35	19.25
Ingredient 2	Surfactant	8%	U.S. EPA Half Green Circle	35	2.80
Ingredient 3	Processing Aid	1.8%	Benchmark 3	40	0.72
Polymer 4	Polymer	35.1%	ToxFMD® Acceptable	35	12.28
Impurity 5	Impurity	0.1%	ToxFMD® Not Acceptable – Low Priority	20	0.020
Total Formulation Screened Chemistry Score					35.0

Formulation A receives ToxFMD® Certificate and is considered a “Preferred Finished Formulation” because its score is ≥ 35 .

EXAMPLE 2: FORMULATION B

Chemical Name	Functional Class	Composition	ToxFMD® Criteria	Screened Chemistry Chemical Score	Weighted Screened Chemistry Chemical Score
Ingredient 1	Solvent	61%	U.S. EPA SCIL Yellow Triangle	N/A	N/A
Ingredient 2	Processing Aid	19.6%	Benchmark U	N/A	N/A
Polymer 3	Polymer	10.1%	ToxFMD® Acceptable	N/A	N/A
Polymer 4	Polymer	9.1%	ToxFMD® Not Acceptable – Low Priority	N/A	N/A
Impurity 5	Impurity	0.11%	ToxFMD® Not Acceptable – High Priority	N/A	N/A
Impurity 6	Impurity	0.09%	ToxFMD® Not Acceptable – Low Priority	N/A	N/A
Total Formulation Screened Chemistry Score					10.0

Formulation B does not receive a ToxFMD® Certificate and is considered a “Finished Formulation of Potential Concern” because its score is 10 or less.