

MALAYSIAN SUSTAINABLE PALM OIL (MSPO) SUPPLY CHAIN REQUIREMENTS

GUIDANCE FOR OLEOCHEMICALS AND ITS DERIVATIVES

MSPO PART 4-2

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SUPPLY CHAIN REQUIREMENTS

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1.INTRODUCTION

Due to the interchangeability of palm and palm kernel-based inputs to produce the same derivative and existence of palm and palm kernel mixtures, the overall input should approximately correspond to the overall output. Conversion rate shall be periodically updated against actual performance or industry average as appropriate.

2.SCOPE

In the case of Oleochemicals and its derivatives where the input or outputs are not palm-based, a conversion factor would be applied. This factor is determined by ascertaining the proportion of palm-based portion in the input/output i.e. The number one (1) if entirely from palm-based or lower fractions based on ratio of molecular weight of palm to the overall molecular weight of the material.

Due to the advancement of new technologies and the many possibilities of Oleochemicals and its derivatives, input or output options that are not be covered under existing conversion factors should be addressed on a case by case basis. Dialogue and decisions shall be documented in an appropriate and transparent manner to allow for auditor scrutiny.

3.GUIDELINE

Use standard conversion factors provided in **Table 1** where applicable. This table shall serve as a guide for the commonly used Oleochemicals and its derivatives. In the case of toilet soaps, the following shall apply:

- 1. An overall factor of 0.6 will be used for soaps with moisture content above 18%
- 2. An overall factor of 0.7 will be used for soaps with moisture content below 18%

TABLE 1: CONVERSION FACTORS

1 Fatty Acids 1.0 2 Fatty Alcohols 1.0 3 Methyl Esters 1.0 4 Fatty Amines 1.0 5 Glycerine 1.0 6 Cocamidopropyl Betaine 0.6 7 Sodium Lauryl Sulfate 0.7 8 Sodium Laureth-1 Sulfate 0.6 9 Sodium Laureth-2 Sulfate 0.5 10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters <t< th=""><th>Index</th><th>Material</th><th>Conversion Factor</th></t<>	Index	Material	Conversion Factor
3 Methyl Esters 1.0 4 Fatty Amines 1.0 5 Glycerine 1.0 6 Cocamidopropyl Betaine 0.6 7 Sodium Lauryl Sulfate 0.7 8 Sodium Laureth-1 Sulfate 0.6 9 Sodium Laureth-2 Sulfate 0.5 10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.6 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	1	Fatty Acids	1.0
Fatty Amines 1.0 Fatty Amines 1.0 Glycerine 1.0 Cocamidopropyl Betaine 0.6 Sodium Lauryl Sulfate 0.7 Sodium Laureth-1 Sulfate 0.6 Sodium Laureth-2 Sulfate 0.5 Sodium Laureth-3 Sulfate 0.5 Laureth-7 0.4 Steareth-7 0.8 Cocamide MEA 0.8 Cocamide DEA 0.6 Stearamidopropyldimethylamine 0.7 Cetyltrimethylammonium chloride 0.8 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 Alkylpolyglycoside 0.4 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 Polyglycerol Esters 1.0 Sorbitan Monoglyceride 0.7	2	Fatty Alcohols	1.0
5 Glycerine 1.0 6 Cocamidopropyl Betaine 0.6 7 Sodium Lauryl Sulfate 0.7 8 Sodium Laureth-1 Sulfate 0.6 9 Sodium Laureth-2 Sulfate 0.5 10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	3	Methyl Esters	1.0
6 Cocamidopropyl Betaine 0.6 7 Sodium Lauryl Sulfate 0.7 8 Sodium Laureth-1 Sulfate 0.6 9 Sodium Laureth-2 Sulfate 0.5 10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	4	Fatty Amines	1.0
7 Sodium Lauryl Sulfate 0.7 8 Sodium Laureth-1 Sulfate 0.6 9 Sodium Laureth-2 Sulfate 0.5 10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	5	Glycerine	1.0
8 Sodium Laureth-1 Sulfate 0.6 9 Sodium Laureth-2 Sulfate 0.5 10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	6	Cocamidopropyl Betaine	0.6
9 Sodium Laureth-2 Sulfate 0.5 10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	7	Sodium Lauryl Sulfate	0.7
10 Sodium Laureth-3 Sulfate 0.5 11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	8	Sodium Laureth-1 Sulfate	0.6
11 Laureth-7 0.4 12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	9	Sodium Laureth-2 Sulfate	0.5
12 Steareth-7 0.8 13 Cocamide MEA 0.8 14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	10	Sodium Laureth-3 Sulfate	0.5
Cocamide MEA Cocamide DEA 0.6 Stearamidopropyldimethylamine 0.7 Cetyltrimethylammonium chloride 18 Isopropyl Esters (e.g. IPM, IPP) Caprylic/Capric Triglyceride (e.g. MCT) Fatty Isethionate (e.g. Sodium Cocyl Isethionate) Alkylpolyglycoside Clycerol Esters (Mono-, Di- and Triglycerides) Polyglycerol Esters Sorbitan Monoglyceride 0.8 1.0 2.1 1.0 2.2 2.3 2.3 2.5 2.5 3.6 3.7	11	Laureth-7	0.4
14 Cocamide DEA 0.6 15 Stearamidopropyldimethylamine 0.7 16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	12	Steareth-7	0.8
Stearamidopropyldimethylamine 0.7 Cetyltrimethylammonium chloride 0.8 Isopropyl Esters (e.g. IPM, IPP) 0.8 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 Alkylpolyglycoside 0.4 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 Polyglycerol Esters 1.0 Sorbitan Monoglyceride 0.7	13	Cocamide MEA	0.8
16 Cetyltrimethylammonium chloride 0.8 17 Isopropyl Esters (e.g. IPM, IPP) 0.8 18 Caprylic/Capric Triglyceride (e.g. MCT) 1.0 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 0.6 20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	14	Cocamide DEA	0.6
17 Isopropyl Esters (e.g. IPM, IPP) 18 Caprylic/Capric Triglyceride (e.g. MCT) 10 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 20 Alkylpolyglycoside 21 Glycerol Esters (Mono-, Di- and Triglycerides) 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.8	15	Stearamidopropyldimethylamine	0.7
Caprylic/Capric Triglyceride (e.g. MCT) 10 19 Fatty Isethionate (e.g. Sodium Cocyl Isethionate) 20 Alkylpolyglycoside 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	16	Cetyltrimethylammonium chloride	0.8
Fatty Isethionate (e.g. Sodium Cocyl Isethionate) O.6 Alkylpolyglycoside Glycerol Esters (Mono-, Di- and Triglycerides) Polyglycerol Esters Sorbitan Monoglyceride 0.6 1.0 0.7	17	Isopropyl Esters (e.g. IPM, IPP)	0.8
20 Alkylpolyglycoside 0.4 21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	18	Caprylic/Capric Triglyceride (e.g. MCT)	1.0
21 Glycerol Esters (Mono-, Di- and Triglycerides) 1.0 22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	19	Fatty Isethionate (e.g. Sodium Cocyl Isethionate)	0.6
22 Polyglycerol Esters 1.0 23 Sorbitan Monoglyceride 0.7	20	Alkylpolyglycoside	0.4
23 Sorbitan Monoglyceride 0.7	21	Glycerol Esters (Mono-, Di- and Triglycerides)	1.0
3 /	22	Polyglycerol Esters	1.0
24 Sorbitan Triglyceride 0.9	23	Sorbitan Monoglyceride	0.7
	24	Sorbitan Triglyceride	0.9

25	Polysorbate 60 (Ethoxylated SMS), Polysorbate 80 (Ethoxylated SMO)	0.2
26	Polysorbate 65 (Ethoxylated STS)	0.5
27	Propylene Glycol Monoester	0.9
28	Lactylated Monoglycerides	0.8
29	Metallic Salts of Lactylic Esters of Fatty Acids (Sodium Stearoyl Lactylate, Calcium Stearoyl Lactylate)	0.6
30	Acetylated Monoglycerides	0.9
31	Succinylated Monoglycerides	0.8
32	Ethoxylated Monoglycerides (Polyglycerate 60)	0.8
33	Sucrose esters of fatty acids	0.5
34	Diacetyltartaric acid esters of monoglycerides (DATEM)	0.6
35	Monoglyceride citrate	0.7
36	Stearoyl Lactylic Acid	0.7
37	Stearyl Tartarate	0.4
38	Sodium stearoyl Fumarate	0.7
39	N-Butyl Esters	0.8
40	2-Ethyl Hexyl Esters	0.7
41	TMP Esters (TMP C8-C10 triester)	0.5
42	Ethylene Glycol Monoesters (EGMS)	0.9
43	Ethylene Glycol Diesters (EGDS)	0.9
44	Methyl Ester Sulphonate	0.7
45	Palm Kernelate	0.7
46	Sodium Stearate	0.7

NOTE 1:

The conversion factors will be updated by Malaysian Oleochemical Manufacturers Group (MOMG) to the TC (MSPO) as and when required to support the progress and compliances of MSPO Supply Chain requirements for the oleochemicals industry.



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