RSPO
Roundtable on Sustainable Palm Oil

The RSPO is an international non-profit organisation formed in 2004 with the objective of promoting the growth and use of sustainable oil palm products through credible global standards and engagement of stakeholders.

Frequently Asked Questions (FAQs)

on Annex 6 RSPO Rules for Oleochemicals and Its Derivatives of the RSPO Supply Chain Certification Standard 2020


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The RSPO Supply Chain Certification Standard 2020 (SCC Standard) describes the requirements related to the control of RSPO certified oil palm products in the supply chain, including flows of RSPO certified oil palm products and associated claims. Clause 4.2 in the Annex 6 of the SCC Standard contains the RSPO Rules for Oleochemicals and its Derivatives, detailing the information on the mass balance rules related to oleochemicals and its derivatives.

This Frequently Asked Questions (FAQs) document was developed as a guidance in the implementation of this Annex 6 as stated in Clause 1.3 and available in the RSPO website (www.rspo.org). It has been developed based on the questions from RSPO members on the applications of mass balance rules in their specific situations and some of the information which was received by the RSPO Secretariat through the RSPO Interpretation Forum (RIF). The information provided in this document only serves as a guidance, and it may be subject to change at any time without prior notice.

The document has been structured in the following orders:

1. Calculation rules for oleochemicals and its derivatives
2. Scope and application of the 1:1 rule for oleochemicals and its derivatives
3. Claims for oleochemicals and its derivatives

1. Calculation rules for oleochemicals and its derivatives

Question 1.1

What is the background of Table 2 – MPOB carbon chain length guideline in Annex 6? How should it beinterpreted and be used?

Answer 1.1

Table 2 – MPOB carbon chain length guideline has been based on Malaysian Palm Oil Board (MPOB) scientific data which defines the oil sources base of the carbon chain distribution. The table presents the characteristics of the four palm oil feedstocks (Palm Oil, Palm Kernel Oil, Palm Stearin and Palm Olein) based on the fatty acids contained and the carbon chain length.

The fatty acid's presence depends on the carbon chain length. The figures in the table represent the percentage of a particular fatty acid in each palm oil feedstock.

For example:

- There is 3.5% of fatty acids in a Palm kernel oil with a carbon chain length of 10 (C10); while there is no fatty acid in the Palm oil with the same carbon chain length.
- There is 48.5% of fatty acids with carbon chain length 12 (C12); while there is only 0.1% of fatty acids in the Palm oil withthe same carbon chain length.

The information in Table 2 in Annex 6 is the basis for the C-chain calculation factors for fatty acids listed in Table 3a.

Similarly, for the C-chain calculation factors for fatty alcohols (as presented in Table 3b of Annex 6), the basis of calculation also refers to the information of percentage presented in Table 2.

Question 1.2

How are the SG and IP carbon chain calculation factors for fatty acids and fatty alcohols are determined (Table 3a -SG and IP C-chain calculation factors for fatty acids and Table 3b - SG and IP C-chain calculation factors for fattyalcohols in Annex 6)?

Answer 1.2

Table 3a - SG and IP C-chain calculation factors for fatty acids and Table 3b - SG and IP C-chain calculation factors for fatty alcohols in Annex 6 indicate the yield factors used generally by the manufacturer to calculate the volume of palm oil or palm kernel oil certified SG or certified IP needed to obtain 1 metric tonne of primary oleochemicals (fatty acid, fatty alcohols), and this depends on the C-chain length.

The calculation factors listed in both tables (Table 3a - SG and IP C-chain calculation factors for fatty acids and Table 3b - SG and IP C-chain calculation factors for fatty alcohols) have been based on the palm oil and palm kernel oil composition outlined in Table 2 – MPOB carbon chain length guideline.

According to Table 3a - SG and IP C-chain calculation factors for fatty acids and Table 3b - SG and IP C-chain calculation factors for fatty alcohols, fatty acids with the C-chain C6-C14 can only be found from palm kernel oil, meanwhile the ones with the C-chain from C16-C18 can be found in both palm oil or palm kernel oil.

Example 1: Calculation of the SG/IP certified volume of the PKO needed to have 1 MT of fatty:

- Volume of PKO needed (VPKO) = ((Vfa/YF)/%FA)
- Volume of PKO needed (VPKO) = ((1/0.87)/0.045) = 25.5 MT

where,

- 1 = Volume Total of fatty acid C8 produced (Vfa)
- 0.87 = Yield factor for fatty acids derived from palm kernel oil (YF)
- 0.045 or 4.5% = is the percentage of fatty acids in the palm kernel oil with C-chain C8 (%FA)

Continued Answer 1.2

In general, for a PKO with the C-Chain C8, we need 25.5 MT of palm kernel oil based (PKO-Based), to obtain 1 MT of fatty acids. This is calculated based on the general yield factor for fatty acids derived from palm kernel oil and the percentage of fatty acids in the palm kernel oil with C-chain C8 as specified in Table 2 – MPOB carbon chain length guideline.

Due to the interchangeability of feedstocks for some oleochemicals and oleo-derivatives, the type of feedstock should be determined by the producer.

Example 2: What will be the volume of fatty acid to produce 1 MT of PKO?

The formula is VPKO = ((Vfa/YF)/%FA) → Vfa = VPKO x YF x %FA

Vfa = 1 x 0.870 x 0.045 = 0.0391 MT of fatty acids

- VPKO : Volume of PKO: 1 MT
- YF: Yield Factor for Fatty Acids: 0.870
- %FA: Percentage of C8 Fatty Acids: 4.5%
- Vfa: Volume of C8 fatty acids produced

Meaning 1 MT of palm kernel oil will produce 0.0391 MT of C8 fatty acid.

Question 1.3

A company has produced 10 MT of a C12 fatty acid which is PKO based. How do we determine the minimumcontents (volume) of PKO needed to produce that volume of C12 fatty acid?

Answer 1.3

1. If we use the formula:
   a. VPKO = ((Vfa/YF)/%FA) where;
      - VPKO (Volume of PKO) = ?
      - YF (Yield Factor for Fatty Acids) = 0.870
      - %FA: Percentage of C12 Fatty Acids = 48.5%
      - Vfa: Volume of C8 fatty acids Produced = 10 MT VPKO = ((10÷0.870)÷0.485) = 23.699 MT
2. If we use table 3a - SG and IP C-chain calculation factors for fatty acids:
   a. The volume of PKO needed to produce 1 MT of 2 fatty acids with C12 C-Chain is 2.369 MT. This means that:

      The volume of PKO needed to obtain 10 MT of fatty acid with C12 C-chain = 2.369 x 10 MT = 23.69 MT

Question 1.4

What will be the volume of PKO needed to produce 1 MT of C-18 Fatty Acid?

Answer 1.4

The formula is VPKO = ((Vfa/YF)/%FA) where;

- VPKO (Volume of PKO) = ?
- YF (Yield Factor for Fatty Acids) = 0.870
- %FA: Percentage of C18 Fatty Acids (C18 = 2, C18:1 = 15, C18:2 = 2.5) = 19.5%
- Vfa: Volume of C8 Fatty Acids Produced = 1 MT VPKO = ((1÷0.870)÷0.195) = 5.894 MT

Question 1.5

A company has produced 1 MT of a Stearic Acid (C18). According to Table 2 – MPOB carbon chain length guideline and Table 3a - SG and IP C-chain calculation factors for fatty acids, this Stearic Acid (C18) can be either PO or PKO based. Is the company allowed to choose between the calculation factor for PO (2.1) or PKO (5.7) as a basis of the calculation?

Answer 1.5

The company should be able to identify feedstocks origin used to produce the specific oleochemicals (i.e. Stearic Acid (C18)), whether PO or PKO based, and apply the corresponding calculation factor; or

In case of interchangeability of feedstocks (PO and/or PKO based) to produce the same oleochemicals (i.e. Stearic Acid (C18)), the choice of feedstock in the actual process route shall be made transparent to the certification bodies, it is always the responsibility of the company to differentiate the calculation factor based on the actual feedstock; or

If the products (i.e. Stearic Acid (C18)) are made from mixed palm oil and palm kernel oil, the oil coverage may be based on the major oil component of the product. The choice of feedstock shall be made transparent to the certification bodies, it is always the responsibility of the company to differentiate the calculation factor based on the actual feedstock.

Question 1.6

Can Oleic Acid (C18.1) be produced from PKO and/or PO?

Answer 1.6

Yes. Oleic acid (C18.1) can be produced from both PKO and PO, PKO or PO.

Question 1.7

Clause 4.1.2 and 4.1.3 of Annex 6 of RSPO SCC Standard refer to the possibility for manufacturers to use their own yield factors for primary oleochemicals and conversion factor for secondary oleo derivatives. How should these factors be determined and be documented?

Answer 1.7

The yield factor and/or conversion factors should be calculated from production data over a representative period of time. Company should document and make available to auditors:

- The raw production data (input, output, production losses, mass balance) which form the basis for calculation;
- The formula which has been applied to calculate the yield factor and/or conversion factors;
- Any assumptions and/or simplifications that have been used for the calculation, including their justification;
- If the company chooses to use specific yield factors and/or conversion factors based on specific in-house data, justification is required.

Company own yield factors and/or conversion factors should be periodically reviewed to ensure accuracy against actual performance, and modified accordingly when appropriate. Auditors should review company own yield factors and/or conversion factors.

2. Scope and application of the 1:1 rule for oleochemicals and its derivates

Question 2.1

Our company purchased 10MT Refined PKO SG, can our company use the 1:1 rule stated in clause 4.2.1 in Annex 6 of RSPO SCC Standard?

Answer 2.1

No. 1:1 rule stated in clause 4.2.1 in Annex 6 of RSPO SCC Standard is only applicable for Mass Balance (MB) Scheme.

Question 2.2

Our company is certified with the supply chain model MB. We purchased a 10 MT Refined PKO MB, is it possible for our company to apply the 1:1 rule stated in clause 4.2.1 in Annex 6 of RSPO SCC Standard.

Answer 2.2

Yes, clause 4.2.1 in Annex 6 of RSPO SCC Standard allows a 1:1 rule for Refined PKO MB.

Question 2.3

We have stock of 10 MT MB Lauric Acid, can we apply the 1:1 rule stated in clause 4.2.1 in Annex 6 of RSPO SCC Standard to sell as 10 MT MB Sodium Laureth Sulphate?

Answer 2.3

Yes, clause 4.2.1 in Annex 6 of RSPO SCC Standard allows a 1:1 rule for Primary Oleochemicals and its Secondary Oleo-derivatives.

Question 2.4

Is it allowed to purchase and use SG oil then claimed as MB products in the downstream derivatives operations by implementing the conversion 1:1 stated in clause C5.3 in RSPO SCC Standard?

Answer 2.4

Yes, sites can purchase a certain volume or weight of IP or SG sustainable palm oil and palm kernel oil products and use it to match the sales of equal volumes of palm product derivatives that then carry a mass balance claim without requiring a physical or chemical link between the acquired IP or SG product and the derivative that is sold under mass balance.

Question 2.5

What is the difference between MB claim and MB claim transfer?

Answer 2.5

The RSPO SCC Standard defines a claim as "any communication (i.e. on-pack, website, sales documents, product specification document, and ACOP report) in any format of the presence of certified sustainable oil palm products to any stakeholder group."

'MB claim' relates to a claim indicating that a product is MB certified, in accordance with the rules laid down in Module C in RSPO SCC Standard and in Module B of RSPO Rules on Market Communications and Claims.

'MB claim transfer' relates to the transfer of a MB claim from one product to another, in accordance with the rules laid down in Annex 6 of RSPO SCC Standard.

Question 2.6

Is it allowed to convert MB fatty acids to MB fatty alcohols even if the chain length is different (e.g. C8-18 fatty acids to C12-14 fatty alcohols) by applying the 1:1 rule?

Answer 2.6

Yes, it is allowed to convert MB fatty acids to MB fatty alcohols even if the chain length is different (e.g. C8-18 fatty acids to C12-14 fatty alcohols) as long as it is from the same feedstock and the MB claim transfer is applied.

Question 2.7

How should companies administer the application of the 1:1 rule in their Mass Balance accounting?

Answer 2.7

The Mass Balance accounting should provide evidence of how the 1:1 rule has been applied. It should be transparent on how mass balance volume from one palm oil or palm kernel oil feedstock, primary oleochemical or secondary oleo-derivative have been transferred to another palm oil or palm kernel oil feedstock, primary oleochemical or secondary oleo-derivative. More specifically, the Mass Balance accounting system should provide information on:

- The dates of the internal administrative transfer of mass balance claims from one product to the other;
- The type of products involved in each transfer of a mass balance claims;
- The quantity of mass balance volume that was transferred in each transaction.

The administration should have separate Mass Balance accounting for palm oil and palm kernel oil products. For companies that have complex mass balance accounting systems including many products and 1:1 rule transactions, specific attention should be paid to transparency and accessibility of the system for auditors.

Question 2.8

How many times is an MB claim transfer allowed?

Answer 2.8

It is allowed only one time.

Question 2.9

What are the conversion factors when primary oleochemicals and secondary oleo-derivates are not at 100%active?

Answer 2.9

Table 4 – Conversion factors for Primary Oleochemicals and Secondary Oleo-derivatives (based on material at 100 % active (excluding water/solvent) in Annex 6 lists conversion factors for primary oleochemicals and secondary oleo-derivatives based on material at 100% active. 100% active in this case means excluding water/solvent.

If the material contains water/solvent, the conversion factor should be adjusted to account for the percentage of water/solvent included.

For example, the conversion factor for sodium stearate is 0.7 at 100% active. If the material is 90% active (moisture content ≤ 18%), a conversion factor of 0.7 should be applied and if the material is 80% active (moisture content >18%), a conversion factor of 0.6 should be applied.

Question 2.10

How to deal with the interchangeability of lauric oils (coconut oil and palm kernel oil) to produce oleo-derivatives?

Answer 2.10

Interchangeability of coconut oil based and certified palm oil-based material in a production (e.g. lauric acid) is possible throughout the production process. However, only palm oil-based content in the final product is allowed to be claimed as certified. Therefore, the organization shall be responsible to maintain an appropriate record to identify the percentage of palm oil-based content when making the claim.

3. Claims for Oleochemicals and its derivatives

Question 3.1

Is it possible to make an RSPO claim when the origin of a particular feedstock is not known, e.g. whether it is palm or soy based?

Answer 3.1

As a matter of principle, the company purchasing the feedstock should undertake reasonable effort to determine the origin of the feedstock. Apart from checking the 'Standard' information already provided in delivery notes or shipping documents, this should include inquiring with the supplier of the feedstock. If it is not possible to obtain details on the origin of the feedstock, no RSPO claim can be attached to the product.

For further information, kindly contact the Certification Helpdesk at: **certification@rspo.org**

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