



## Infant Formula Usage – ready to Use Infant Formula and Powdered Infant Formula

### Summary Description:

Ready-to use infant formula (RUIF) or powdered infant formula (PIF) is intended for use as a substitute for breastmilk, where necessary, in meeting the normal nutritional requirements of infants. It can be used for infants from 0-12 months.



**NOTE: RUIF OR PIF SHOULD ONLY BE PURCHASED AND USED FOR ASSESSED AND TARGETED INFANTS IN ACCORDANCE WITH THE OPERATIONAL GUIDANCE ON INFANT AND YOUNG CHILD FEEDING IN EMERGENCIES AND WITH THE EXPRESS AGREEMENT OF SAVE THE CHILDREN'S EMERGENCY NUTRITION TECHNICAL WORKING GROUP.**

### Technical Specification:

#### **General description:**

RUIF/PIF is a breast-milk substitute used to satisfy the nutritional requirements of infants up to 12 months of age. Infant formula contains per 100ml not less than 60kcal and not more than 70kcal of energy. RUIF/PIF must meet the Codex Alimentarius Standards for infant formula. Full specification can be found at Codex Alimentarius.

**IMPORTANT NOTE:** This product should only be used for assessed and targeted infants in accordance with the Operational Guidance for Infant and Young Child Feeding in Emergencies. Only after careful consideration and discussions with HQ technical advisors and endorsement of the cross-member Emergency Nutrition Technical Working Group should an artificial feeding programme be developed.

#### **Key information sources:**

- Operational Guidance on Infant and Young Child Feeding in Emergencies
- Infant Feeding in Emergencies. Module 2 Version 1.1, December 2007  
<http://www.enonline.net/ife>
- Codex Alimentarius Standards
- International Code of Marketing of Breastmilk Substitutes
- Guidelines for the safe preparation, storage and handling of powdered infant formula from WHO
- Other guidelines on use of PIF:
  - (i) Cup-Feeding at Home from WHO
  - (ii) In care settings from WHO

- Note: See the Save the Children IYCF-E Toolkit

## Ingredients:

- Based on the milk of cows and/or other animals and other ingredients which have been proven to be suitable for infant feeding.
- All ingredients and food additives are gluten-free
- Must be free of lumps and of large coarse particles
- All ingredients must be clean, of good quality, safe and suitable for ingestion by infants
- Must conform with normal quality requirements, such as colour flavour, and odour.
- Must meet the Codex Alimentarius Standards for infant formula.

**Shelf life:** See below:

## Storage:

Guidance on storage of infant formula			
Item	Store	Length of time	Additional considerations
Unopened liquid and powdered infant formula	Cool dry areas (0-30 celcius)	To expiry date	Rotate using a first –in, first-out inventory method. Throw away out-of-date formula
Opened infant formula powder	Cool dry area	If in original container, for up to four weeks	Note the manufacturer's instructions. Label with the opening time and date.
Opened commercial liquid formula	Refrigerator	Up to 48 hours (if unrefrigerated then once opened formula should be used within 1 hour)	Covered in original container
Prepared formula	Refrigerator	24 hours (if unrefrigerated, prepared formula should be used in 1 hour*, ideally immediately)	

\* take into account the local temperature which may vary through the day – if the temperatures are high, then the safe keeping times of non-refrigerated formula will be reduced.

**Important Note: Where there are limited or no refrigeration facilities, then PIF must be freshly prepared for each feed time and a new RUIF carton should be used for every feed. Both surplus and leftover milk should be thrown away.**

## Packaging:

The product is packed in containers which will safeguard the hygienic and other qualities of the food. When in liquid form, the product is packed in hermetically sealed containers; nitrogen and carbon dioxide may be used as packing media.

The product must meet the provisions set out in the International Code of Marketing of Breastmilk Substitutes. Labels of procured infant formula should be in an appropriate language and should adhere to the specific labelling requirements of the International Code. These include: products should state the superiority of breastfeeding, indicate that the product should be used only on health worker advice, and warn about health hazards; there should be no pictures of infants or other pictures idealising the use of infant formula. Purchased products may need to be relabelled prior to distribution, which will likely have considerable cost and time implications. Generic (unbranded)

formula is preferred.

Single-feed cartons/tins of RUIF are preferable as once opened RUIF is a breeding ground for bacteria.

PIF should be provided with the manufacturers scoop.

## **Instructions for use:**

RUIF/PIF should only be provided following a needs assessment and then to targeted caregivers with infants who meet the agreed targeting criteria (see Operational Guidance on IYCF-E 6.2) following an assessment by a qualified health or nutrition worker qualified in breastfeeding and infant feeding issues.

RUIF/PIF should NOT be distributed as a single item without supporting resources, education and on-going support. Technical support should be obtained BEFORE any distribution.

PIF might be contaminated with micro-organisms such as *E sakazakii* and *Salmonella*, therefore it should be made fresh using boiled water that has been allowed to cool to no less than 70 °C (to achieve this temperature, the water should be left for no more than 30 minutes after boiling). Formula should then be rapidly cooled before feeding. Any formula that is not used should be discarded (or drunk by older child/mother) after 1 hour (if refrigerated it can be kept for longer)

RUIF does not need any preparation or heating. It can be poured into the feeding cup and immediately given to the infant. RUIF is easily contaminated once it is opened, therefore any formula that is not used should be discarded (or drunk by older child/mother) after 1 hour (if refrigerated it can be kept for longer).

The provisions of the International Code of Marketing of Breastmilk Substitutes apply in emergencies. Suspected violations of the Code, such as inappropriate distribution or unsolicited donations of infant formula, should be reported to the designated co-ordinating agency on infant feeding, or the competent national authority. (see Operational Guidance on IYCF-E, Section 7 (Key Contacts), v2.1, February 2007). (Note: The Operational Guidance on IYCF-E, which embeds the Code, is also mandated by WHA resolution 63.23, 2010)

## **Notes:**

### **Full description:**

Commercial infant formula products are usually:

- non-sterile powdered infant formula (PIF)
- sterile liquids (e.g. liquid concentrate, or ready to use infant formula (RUIF))

The choice of which to use depends on resources (e.g. RUIF is more expensive), availability (e.g. RUIF may not be locally available), transportation and storage (e.g. RUIF is much bulkier), preparation facilities (e.g. RUIF does not require reconstitution with water) and which is most commonly used by the population. In general, PIF is most economical to transport and store, while RUIF may be preferred where cheaper road transportation is possible, and/or where water supply and hygiene conditions are poor. Both PIF and RUIF have been used in emergencies however, the risks of using PIF or RUIF in an emergency setting have not been researched. There are advantages and disadvantages with using PIF and RUIF and any type of formula feeding increases the risks for infants of illness and death. Particular considerations are:

- Powdered infant formula is not sterile. There is a risk that they might be contaminated with micro-organisms such as *E sakazakii* and *Salmonella*. Infants who may be particularly vulnerable to infection and death are low birth weight infants or infants born prematurely, and infants whose mothers are HIV positive. Due to this it is important to make the formula

fresh using water no less than 70 degrees (see 'Instructions for Use'.)

- The Operational Guidance on IYCF-E (2010 addendum to version 2.1, 2007) states that 'RUIF may minimise health risks with support services for use of powdered infant formula are established. RUIF is not a guarantee of safety – appropriate use, hygiene of feeding utensils and storage considerations remain essential.' RUIF provides an ideal environment for the growth of harmful bacteria.
- See 'Key Information' for additional guidance on PIF and RUIF.

According to the Operational Guidance on IYCF-E once formula is provided to an infant this supply needs to continue for as long as the infant concerned needs it - until breastfeeding is re-established or until at least 6 months of age, and formula or some other source of milk and/or animal source food after that during the complementary feeding period (6-24 months of age), This needs to be taken into account in procurement plans.

The secure sustainable supply of infant formula must meet the Codex Alimentarius Standards for infant formula. and have a shelf-life of at least 6 months on receipt of the supply. It should also meet the requirement of the International Code of Marketing of Breastmilk Substitutes. Generic (unbranded) formula is preferred

#### **How to use them:**

See 'Instructions for use' above.

The Operational Guidance on IYCF-E stipulates that PIF / RUIF should ONLY be given to the caregiver if they are hygienically able to provide it at home. This means: (i) Understanding all the steps in preparation (ii) Having all the resources needed for hygienic preparation (iii) Having shown their ability to correcting prepare and manage the feed. A full artificial feeding assessment on a caregiver-baby pair MUST be undertaken to assess whether the household has the resources and skills necessary for storage, preparation and feeding of artificial milk. The 'Safer BMS Kit' provides resources however, if the caregiver cannot give PIF/RUIF correctly at home then the caregiver should come to a central area for consumption (wet feeding) until they can do this at home (this has logistical and safety issues).

Use of infant formula by an individual caregiver should always be linked to education, one-to-one demonstrations and practical training about safe preparation, and to follow-up at the distribution site and at home by skilled health workers. Follow-up should include regular monitoring of infant weight at the time of distribution (no less than twice a month). (Operational Guidance 6.2.3, v2.1, February 2007)

In order to minimise the risks of illness, malnutrition and death of artificial feeding (RUIF and PIF) then supportive resources ('Safer BMS Kit') should be provided.

#### **Things to avoid:**

Breastmilk substitutes are never safe even in non-emergency settings. In emergencies the risks of morbidity, malnutrition and death for not-breastfed infants increase significantly. Breastfeeding is life-saving especially in emergencies. Relactation, wet nursing, donated breastmilk should always be prioritised first before undertaking an artificial feeding programme. Infant formula should only be provided in accordance with the Operational Guidance on IYCF-E. Only after careful consideration and discussions with HQ technical advisors and endorsement of the Save the Children, cross member Emergency Nutrition Technical Working Group should an artificial feeding programme be developed.

Care must be taken not to undermine breastfeeding. Any RUIF/PIF programme should be undertaken discretely so as not to undermine breastfeeding, relactation and wet nursing. The formula and any reference to the RUIF/PIF should be hidden from view. If possible a separate room

or tent should be used for the artificial feeding programme.

Feeding bottles cannot be sterilised in an emergency, open top cups are safer. Caregivers should be taught how to safely cup feed.

In an emergency, donations of infant formula should not be solicited or accepted (see Operational Guidance on IYCF-E, section 6.1, v2.1, February, 2007). You should report unsolicited donations or offers of donations to the co-ordinating agency for infant feeding.

When infant formula is used, markets should be monitored to see whether the distributed formula is being sold ('spillover'), or whether prices of formulas change. This monitoring could be one of the tasks of community outreach workers.

**Consider purchasing at the same time:**

Preparation equipment, utensils and hygiene/sterilization equipment must be purchased alongside any purchase of BMS (see 'Safer BMS Kit'). Depending on the programme e.g. care setting (orphanage) or at home, additional resources will be required in order to reduce the risk of contamination as much as possible.

The 'Safer BMS Kit' aims to provide resources to minimise the risks of artificial feeding. While these items are particularly important for PIF, many are still critical for RUIF programmes (see 'Safer BMS Kit').

In order to ensure that breastfeeding is not undermined in emergencies by providing RUIF/PIF and supporting resources to caregivers of breastfed infants that have no possibility to be breastfed then breastfeeding mothers should receive something of greater or equal value. The nature of this will depend on programming and what is valued by mothers in that context but may be vouchers, food, clothes.

*[Acknowledgements: From SC Supply Catalogue 2013. Save the Children would also like to acknowledge the support of the TOPS Micro Grant Program which was made possible by the generous support and contribution of the American people through the United States Agency for International Development (USAID). The original version of this document, and the other IYCF-E Toolkit documents, can be found at <https://resourcecentre.savethechildren.net/iycf-e>]*