Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

Aminoven 8, solution for infusion, polypropylene infusion bag

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

1000 ml solution for infusion contain:

Isoleucine	2. 50 g
Leucine 3.	70 g
Lysine acetate = Lysine 3.30 g	4. 655 g
Methionine	2. 15 g
Phenylalanine	2. 55 g
Threonine	2. 20 g
Tryptophan	1. 00 g
Valine 3.	10 g
Arginine	6. 00 g
Histidine	1. 50 g
Alanine 7.	00 g
Glycine 5.	50 g
Proline 5.	60 g
Serine 3.	25 g
Tyrosine 0.	20 g
Taurine 0.	50 g

Total amino acids:	50.0 g/l
Total nitrogen:	8.1 g/l
Total energy:	840 kJ/l (= 200kcal/l)

Titratable acidity : 12 mmol NaOH/l

3 PHARMACEUTICAL FORM

Solution for infusion

The solution is clear and colourless to slightly yellow

pH:	5.5 - 6.3
Theoretical osmolarity:	495 mosm/l

4 CLINICAL PARTICULARS

4.1 Therapeutic Indications

For supply of amino acids as part of a parenteral nutrition regimen.

Amino acid solutions should be administered generally in combination with adequate amount of energy supplements.

4.2 Posology and method of administration

Posology
The daily requirement of amino acids depends on the body weight and the metabolic conditions of the patient.
The maximum daily dose varies with the clinical condition of the patient and may even change from day to day.
The recommended infusion period is to provide a continuous infusion for at least 14 hours up to 24 hours, depending on the clinical situation. Bolus administration is not recommended.
The solution is administered as long as a parenteral nutrition is required.

Adults

Dosage:
16 - 20 ml of Aminoven 8 per kg body weight/day (equivalent to 0.8 - 1.0 g amino acids per kg body weight/day), e.g. corresponding to 1120 - 1400 ml Aminoven 8 at 70 kg body weight/day.

Maximum infusion rate:
2.0 ml of Aminoven 8 per kg body weight/hour (equivalent to 0.1 g amino acids per kg body weight/hour).

Maximum daily dose:
20 ml of Aminoven 8 per kg body weight/day (equivalent to 1.0 g amino acids per kg body weight/day) corresponding to 70 g amino acids at 70 kg body weight.

For an increased amino acids dosage suitable preparations are available.

Paediatric population
No studies have been performed in the paediatric population.
Aminoven 8 is contraindicated in children less than 2 year of age (see section 4.3). For children under 2 years, paediatric amino acid preparations which are formulated to meet their different metabolic needs should be used.

Children and adolescents (2-18 years)

Dosage:
The dose should be adjusted to hydration status, biological development and body weight.

Maximum infusion rate:
Same as for adults, see information above.

Maximum daily dose:
40 ml of Aminoven 8 per kg body weight/day (equivalent to 2.0 g amino acids per kg body weight/day) but total daily fluid intake must be considered.

Method of administration
For administration via a peripheral or central vein as a continuous infusion.

4.3 Contraindications

The administration of Aminoven 8 is contraindicated in children less than 2 years of age.

As for all amino acid solutions the administration of Aminoven 8 is contra-indicated in the following conditions**:**
Disturbances of amino acid metabolism, metabolic acidosis, renal insufficiency without haemodialysis or haemofiltration treatment, advanced liver insufficiency, fluid overload, shock, hypoxia, decompensated heart failure.

4.4 Special warnings and precautions for use

Serum electrolytes, fluid balance and renal function should be monitored.

In cases of hypokalemia and/or hyponatremia adequate amounts of potassium and/or sodium should be supplied simultaneously.

Amino acid solutions may precipitate acute folate deficiency. Therefore folic acid should be given daily.

Care should be given if large volumes infused in patients with cardiac insufficiency.

Infusion via peripheral veins in general can cause irritation of the vein wall and thrombophlebitis. Therefore, daily inspections of the insertion site are recommended.

If adjunction of lipid emulsions is indicated it should be administered where possible as a mixture with Aminoven 8 in order to minimise the risk of vein irritation.
The choice of a peripheral or central vein depends on the final osmolarity of the mixture. The general accepted limit for peripheral infusion is approx. 800 mosm/l, but it varies considerably with the age and the general condition of the patient and the characteristics of the peripheral veins.

Strict asepsis should be maintained, particularly when inserting a central vein catheter.

Aminoven 8 is for use as part of total parenteral nutrition in combination with adequate amounts of energy supplements (carbohydrate solutions, lipid emulsions), electrolytes, vitamins and trace elements.

4.5 Interaction with other medicinal products and other forms of interaction

No interactions are known to date.
Concerning incompatibilities, see Section 6.2.

4.6 Fertility, pregnancy and lactation

No specific studies have been performed to assess the safety of Aminoven 8 in fertility, pregnancy or lactation. However, clinical experiences with similar parenteral amino acid solutions have shown no evidence of risk during pregnancy or breastfeeding. The risk/benefit relationship should be considered before administering Aminoven 8 during pregnancy or breastfeeding.

4.7 Effects on ability to drive and use machines

Not relevant.

4.8 Undesirable effects

None known when correctly administered.
Undesirable effects which occur during overdose (see Section 4.9) are usually reversible and regress when therapy is discontinued. Infusion via peripheral veins in general can cause irritation of the vein wall and thrombophlebitis.
No clinical studies have been conducted.

Reporting of suspected adverse reactions
Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via HPRA Pharmacovigilance, Earlsfort Terrace, IRL - Dublin 2; Tel: +353 1 6764971; Fax: +353 1 6762517. Website: www.hpra.ie; E-mail: medsafety@hpra.ie.

4.9 Overdose

As with other amino acid solutions shivering, vomiting, nausea, and increased renal amino acid losses can occur when Aminoven 8 is given in overdose or the infusion rate is exceeded. Infusion should be stopped immediately in this case.

It may be possible to continue with a reduced dosage.
A too rapid infusion can cause fluid overload and electrolyte disturbances.

There is no specific antidote for overdose. Emergency procedures should be supportive general measures, with particular attention to respiratory and cardiovascular systems. Close biochemical monitoring is essential and specific abnormalities should be treated appropriately.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Amino acids - solution for parenteral nutrition, ATC code: B05B A01

The amino acids contained in Aminoven 8 are all naturally occuring physiological compounds. As with the amino acids derived from the ingestion and assimilation of food proteins, parenterally administered amino acids enter the body pool of free amino acids and all subsequent metabolic pathways.

5.2 Pharmacokinetic properties

The amino acids in Aminoven 8 enter the plasma pool of corresponding free amino acids. From the intravascular space, amino acids reach the interstitial fluid and the intracellular space of different tissues.
Plasma and intracellular free amino acid concentrations are endogenously regulated for each single amino acid within narrow ranges, depending on the age, nutritional status and pathological condition of the patient.
Balanced amino acid solutions such as Aminoven 8 do not significantly alter the physiologicamino acid pool of essential and non-essential amino acids when infused at a constant and slow infusion rate.
Characteristic changes in the physiologic plasma amino acid pool are only foreseeable when the regulative function of essential organs as liver and kidneys is seriously impaired. In such cases special formulated amino acid solutions may be recommended for restoring homeostasis.
Only a small proportion of the infused amino acids is eliminated by the kidneys.
For the majority of amino acids plasma half-lives between 10 and 30 minutes have been reported.

5.3 Preclinical safety data

Preclinical toxicity data are available for single amino acids but are not relevant to mixtures of amino acids in solutions such as Aminoven 5%. No preclinical toxicity studies with Aminoven 8 have been carried out. Studies with comparable amino acid solutions have shown no toxic effect.
Intravenous infusion of doses of Aminoven 8 were well tolerated in rabbits. Aminoven 8 administered in error by intra-arterial infusion, paravenous, subcutaneous or intramuscular injection to rabbits caused histopathological changes (eg oedema, haemorrhage, lymphohistiocytic infiltration) comparable to those seen in the control animals, but was otherwise well tolerated.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Glacial acetic acid
Water for injections

6.2 Incompatibilities

Due to the increased risk of microbiological contamination and incompatibilities, amino acid solutions should not be mixed with other medicinal products. Should it become necessary to add other nutrients, see sections 6.3 c), 6.4, 6.6.

6.3 Shelf life

a) Shelf-life of the medicinal product as packaged for sale
Infusion bag: 18 months.

b) Shelf life after first opening the container
Aminoven 8 should be used with sterile transfer equipment immediately after opening. Any unused solution should be discarded.

c) Shelf-life after mixing with other components
In general, Total Parenteral Nutrition (TPN) admixtures may be stored for a maximum period of 24 hours at 2^{o}C to 8° C, unless a longer storage period has been proven. See Section 6.4.

6.4 Special precautions for storage

Keep container in the outer carton.
Do not freeze.

Storage precautions after mixing with other components:
Aminoven 8 may be aseptically admixed with other nutrients as lipid emulsions, carbohydrates and electrolytes. Chemical and physical stability data for a number of admixtures stored at 4°C for up to 9 days are available from the manufacturer upon request**.**

From a microbiological point of view, TPN admixtures compounded in uncontrolled or unvalidated conditions should be used immediately.

If not used immediately, in-use storage times and conditions prior to use are the responsibility of the user and should normally be no longer than 24 hours at 2^{o}C to 8°C, unless mixing has taken place in controlled and validated aseptic conditions.

6.5 Nature and contents of container

Infusion bags consisting of an inner and an over pouch. The inner bag is made of polypropylene-based polymer. An oxygen absorber is placed between the inner bag and the over pouch.

Bag size: 500 ml, 12 x 500 ml.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

To be used immediately after the container is opened.

For single use only.
Do not use Aminoven 8 after expiry date.
Use only clear, particle-free solutions and undamaged containers.

Discard unused solutions. Any admixture remaining after infusion must be discarded.

Due to the increased risk of microbiological contamination and incompatibilities, amino acid solutions should not be mixed with other drugs. Should it become necessary to add other nutrients, like carbohydrates, lipid emulsions, electrolytes, vitamins or trace elements to Aminoven 8 for complete parenteral nutrition, care should be given to aseptic techniques, thorough mixing and, in particular, to compatibility.

Compatibility data are available from the manufacturer for a number of mixtures.

7 MARKETING AUTHORISATION HOLDER

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8 MARKETING AUTHORISATION NUMBER

PA 566/2/4

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 27 May 2005
Date of last renewal: 6 January 2009

10 DATE OF REVISION OF THE TEXT

November 2014