



LIPID EMULSION WITH VITAMINS

SMOFlipid 20% with Soluvit N[®] and Vitalipid N[®]

Read in conjunction with [Disclaimer](#)

Formulary: Unrestricted							
Presentation	<p>KEMH: 25 mL prefilled syringe</p> <p>Each 25 mL syringe contains:</p> <table border="0"> <tr> <td>SMOFlipid 20% emulsion</td> <td>18.75 mL</td> </tr> <tr> <td>Soluvit[®] N</td> <td>1.25 mL</td> </tr> <tr> <td>Vitalipid N Infant</td> <td>5 mL</td> </tr> </table>	SMOFlipid 20% emulsion	18.75 mL	Soluvit [®] N	1.25 mL	Vitalipid N Infant	5 mL
	SMOFlipid 20% emulsion	18.75 mL					
	Soluvit [®] N	1.25 mL					
Vitalipid N Infant	5 mL						
<p>PCH: 50 mL prefilled syringe</p> <p>Each 50 mL syringe contains:</p> <table border="0"> <tr> <td>SMOFlipid 20% emulsion</td> <td>37.5 mL</td> </tr> <tr> <td>Soluvit[®] N</td> <td>2.5 mL</td> </tr> <tr> <td>Vitalipid N Infant</td> <td>10 mL</td> </tr> </table>	SMOFlipid 20% emulsion	37.5 mL	Soluvit [®] N	2.5 mL	Vitalipid N Infant	10 mL	
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Soluvit [®] N	2.5 mL						
Vitalipid N Infant	10 mL						
	<ul style="list-style-type: none"> • Final lipid content of combination emulsion = 17%. • 6 mL ≈ 1 g of lipid emulsion (containing vitamins). • See Appendix for more information on lipid and vitamin content. 						
Classification	Lipid emulsion with vitamins.						
Indication	<p>Concentrated source of energy and essential fatty acid for babies unable to receive enteral feeding because of immaturity or illness.</p> <ul style="list-style-type: none"> • Contains both water soluble and fat soluble vitamins. • Included in a total parenteral nutrition (TPN) regimen. 						
Special Considerations	Use with caution in the presence of hepatic disease or unconjugated hyperbilirubinemia.						
Monitoring	Standard parenteral nutrition monitoring as per Neonatal Parenteral Nutrition guideline.						
Compatibility	<p>Do not add other medication or fluids to syringes containing SMOFlipid with vitamins.</p> <p>Refer to KEMH Neonatal Medication Guideline: Y-Site IV Compatibility in Neonates</p>						
Adverse Effects	<p>As per the product information, the following adverse effects have been noted to have occurred for neonatal and paediatric patients receiving SMOFlipid, however in practice they are very rare:</p> <p>Anemia, vomiting, increased GGT, infection, cholestasis, pyrexia, increased CRP, hyperbilirubinemia, abdominal pain, increased conjugated bilirubin, diarrhoea, tachycardia, thrombocytopenia, hyperglycemia, sepsis.</p>						

Adverse Effects	<p>When doses or infusion rates exceed recommendation consider:</p> <ul style="list-style-type: none"> • ‘Fat overload syndrome’ – Not reported in neonates. In adults it has been reported with rapid infusion or when recommended dose is exceeded. In adults it is characterised anaemia, leukopenia, thrombocytopenia, coagulation disorders, and deteriorating liver function. • Metabolic acidosis has been reported after rapid infusion of IV lipid emulsions. Monitoring required in case of exceeding recommended rate of administration.
Storage & Stability	<p>Refrigerate at 2 to 8°C until in use, do not freeze.</p> <ul style="list-style-type: none"> • Protect from light. Supplied in amber syringes, use polyethylene (PE), light protective line for administration.

INTRAVENOUS INFUSION	Presentation	<p>KEMH: 25 mL prefilled syringe PCH: 50 mL prefilled syringe</p>													
	Dosage	<p>Administered as per Neonatal Parenteral Nutrition guideline.</p> <p>Commence at 12 mL/kg/day, increase each day by 4 mL/kg/day to a maximum of 20 mL/kg/day as per:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">TPN order</th> <th style="text-align: left;">Rate</th> <th style="text-align: left;">Lipid dose</th> </tr> </thead> <tbody> <tr> <td>Day 1 of TPN</td> <td>12 mL/kg/day</td> <td>≈ 2 g fat/kg/day</td> </tr> <tr> <td>Day 2 of TPN</td> <td>16 mL/kg/day</td> <td>≈ 2.7 g fat/kg/day</td> </tr> <tr> <td>Day 3 of TPN</td> <td>20 mL/kg/day</td> <td>≈ 3.4 g fat/kg/day</td> </tr> </tbody> </table>		TPN order	Rate	Lipid dose	Day 1 of TPN	12 mL/kg/day	≈ 2 g fat/kg/day	Day 2 of TPN	16 mL/kg/day	≈ 2.7 g fat/kg/day	Day 3 of TPN	20 mL/kg/day	≈ 3.4 g fat/kg/day
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Administration	<div style="border: 2px solid orange; padding: 5px; margin-bottom: 10px;">  WARNING: Error prone administration – double check prescribed dose and rate of administration. </div> <p>IV infusion:</p> <ul style="list-style-type: none"> • Infuse prescribed dose via syringe driver pump over 20 hours. • Use a polyethylene (PE), light protective line for administration. • Do not infuse in excess of 1 mL/kg/hour (0.16 g/kg/hour). • If the prescribed dose is greater than the volume of the prefilled syringe, pause the infusion to change the syringe when the first one runs out. 														

Appendix

Content of SMOFlipid 20%:

Lipid component	Percentage of total lipid content
Soybean oil	30%
Medium-chain triglycerides (MCT)	30%
Olive oil	25%
Fish oil	15%

Vitamin content in Lipid Emulsion with Vitamins:

Fat soluble vitamin (from Vitalipid N Infant)	Per 6 mL of lipid emulsion with vitamins
Vitamin A (retinol)	83 microg
Vitamin D (ergocalciferol)	1.2 microg
Vitamin E (dl-alpha-tocopheryl acetate)	0.77 mg
Vitamin K (phytomenadione)	24 microg
Water soluble vitamin (from Soluvit® N)	Per 6 mL of lipid emulsion with vitamins
Vitamin C (ascorbic acid)	3 mg
Vitamin B1 (thiamine)	93 microg
Vitamin B2 (riboflavin)	0.11 mg
Vitamin B3 (niacin)	1.2 mg
Vitamin B5 (pantothenic acid)	0.45 mg
Vitamin B6 (pyridoxine)	0.12 mg
Vitamin B7 (biotin)	1.8 microg
Vitamin B9 (folic acid)	12 microg
Vitamin B12 (cyanocobalamin)	0.15 microg

Related Policies, Procedures, and Guidelines

Clinical Practice Guidelines:

[CAHS Neonatology – Parenteral Nutrition](#)

Pharmaceutical and Medicines Management Guidelines:

[CAHS Neonatology – Medication Administration Guideline](#)

[WNHS Cold Chain Management for Medications and Vaccines](#)

[CAHS Medication Refrigerators and Freezers](#)

References

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Fresenius Kabi. Vitalipid N Product Information. Bad Homburg, Germany: Fresenius Kabi; 2023 [cited 2025 Apr 10]. Available from <https://www.fresenius-kabi.com/au/products/parenteral-nutrition>

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