

The Macco logo is written in a white, elegant script font. It is positioned at the top of the page, centered over a background image of a medical drip chamber and a patient in a hospital bed. The drip chamber is a clear plastic device with a filter and a tube, hanging from a stand. The patient is lying in a bed, and the background is a blurred hospital room with blue lighting.

*Macco*

*Mineral salts for*

# DIALYSIS & INFUSION

*solutions*

Minerals play a key role in the human body and in case of their deficiency, the best and fastest way to deliver fluids and medication throughout a patient's body is the intravenous route which enables minerals to be fully absorbed within the body circulation.

**Infusion solutions (IV)** composed from our mineral salts serve as a fast carrier of the most important pure minerals.

Our materials are essential in **dialysis treatment** for patients suffering from kidney failure and are used in hemodialysis (HD) and peritoneal dialysis (PD) and acute care dialysis solutions. Some countries consider HD solution as a medical device whereas it is a drug elsewhere. PD and acute care dialysis solutions are always considered as a drug and therefore all raw materials must be **API**.

Manufacturers of HD, PD, acute care dialysis as well as IV solutions who are searching for **qualified raw material producers** belong to core clients of Macco Organiques.

A dialysis solution has levels of minerals that are similar to their natural concentration in healthy blood. The levels of the components of dialysate are typically prescribed by a nephrologist according to the needs of each individual patient. The typical composition of dialysis solution consists of:

- **Calcium Chloride Dihydrate**
- **Magnesium Chloride Hexahydrate**
- **Potassium Chloride**
- **Sodium Chloride**
- **Sodium Bicarbonate**
- **Sodium Acetate Trihydrate / Anhydrous or Sodium Diacetate**
- **Citric Acid / Acetic Acid**

The high level of quality is reflected in the certification and registrations awarded to Macco Organiques:

Type	Chemical production				Product						
	Compliance	EU Certificate	US GMP	Jap. Certificate	CEP / CoS Certificate	EDFM Doc.	US DMF Registr.	JDMF Registr.	CDMF Registr.	KDMF Registr.	Taiwan DMF Registr.
Certification Body	N/A	PIC / S	FDA	Jap. MoH	EDQM	N/A	FDA	Jap. MoH	CDE	Korean MoH	Taiwan MoH
Calcium Chloride 2Hy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Magnesium Chloride 6Hy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Potassium Chloride	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Sodium Glycerophosphate	✓	✓	✓		in process	✓	✓				
Sodium Lactate min. 50%	✓	✓				✓					
Tri-Sodium Citrate Dihydrate	✓	✓	✓								
Sodium Acetate Anhydrous	✓	Health Canada	✓		x	x	✓				
Sodium Acetate Trihydrate	✓	Health Canada	✓		✓	✓	✓				
Sodium Chloride	✓	✓	✓		✓	✓	✓				
Sodium Bicarbonate	✓	✓	✓		✓	✓	✓				

The developing field of **dialysis and infusion solutions** appreciates the flexibility of packaging which Macco Organiques can offer respecting individual needs of each client.

### Production under



### Certification and Registrations:

GMP Q7, FSSC 22000, ISO 9001, CoS/CEP, DMF, Halal, Kosher, API Facility and DMF registrations at the US FDA

### Quality Standards:

EP, BP, USP, JP, FCC, E-numbers, ACS

### Our standard pack sizes:

Low volume sacks and jars (50 g - 5 kg), **Bags** (10 kg - 25 kg), Carton boxes 25 kg, Plastic drums (12 kg - 250 lb), Fibre drums (25 kg - 250 lb), **Big-bags** (400 kg - 1 000 kg)



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BRINGING  
MINERALS  
TO LIFE...



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