

1984

# COORDINATE DIAGRAM FOR SALINE HORIZONS

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## DEFINITION

Saline Horizon is defined by two chemical criteria:

- SALINE CONCENTRATION : Electrical Conductivity in Saturation Extract (25°C), must be at some time of the year and at least in 15 cm thickness:

$EC > 15 \text{ dS.m}^{-1}$  if  $3.5 < \text{pH} < 8.5$

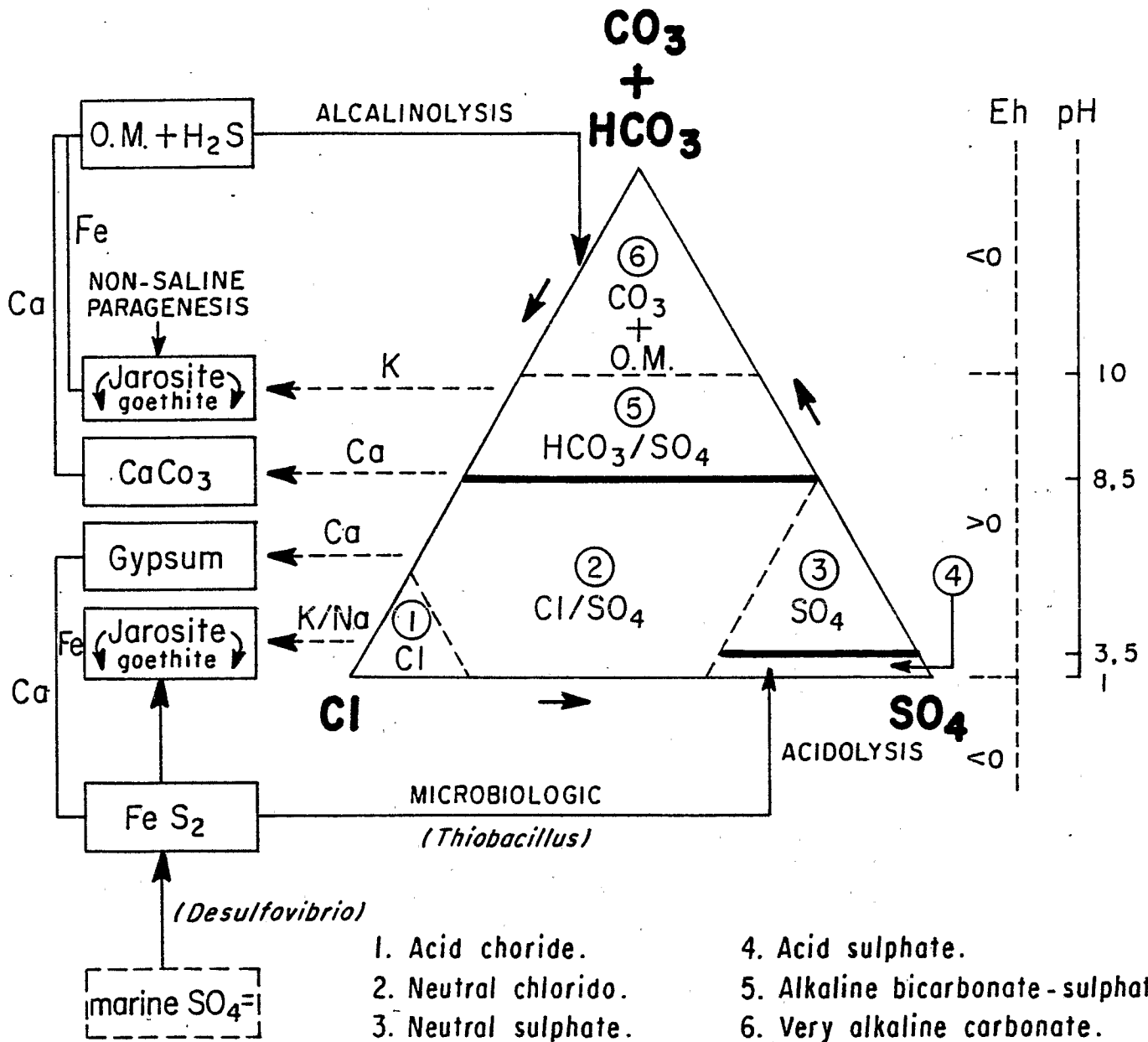
$EC > 8 \text{ dS.m}^{-1}$  if  $3.5 > \text{pH} > 8.5$

**Remark :** High saline concentration in soil solution leads obligatory to adsorption of Na or Mg on the exchangeable complex, especially in non calcic environments, but the structure remains stable.

- SOLUBILITY : The possible salts must be more soluble than gypsum (Log K 25°C > - 4.85). They are distinguished *inside of the anionic triangular diagram* Fig. 1 : Neutral (1, 2, 3), Acid (4), or Alkaline salts (5, 6).  
Within this EC range all the others present salts with a solubility product less than gypsum, are considered like non-saline mineral paragenesis (*outside of the triangle*).

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Main salt-affected horizons.

## EQUIVALENT TERMS

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*Salic Horizon*

- (1) Acid chloride
- (2) Neutral chlorido-sulfate
- (3) Neutral sulfate
- (4) Acid sulfate
- (5) Alkaline sulfate-bicarbonate
- (6) Very alkaline carbonate

**FRENCH REFERENTIAL**

*Salique Horizon*

- Neutral (  $EC > 15 \text{ dS.m}^{-1}$   
and  $pH < 8.5$  ) :  
Chlorido-sulfate / Sulfate.
- Alkaline (  $EC > 8 \text{ dS.m}^{-1}$   
and  $pH > 8.5$  ) :  
Bicarbonate / Carbonate.

**E. A. FITZPATRICK**

*Saline Horizon*

- Chloron
- Halon
- Sulphon
- Thion
- Alkalon
- Alkalon

**U.S.D.A.**

*Salic Horizon*

Thickness  $> 15 \text{ cm}$  with  
in weight  $> 2 \%$  salts more  
soluble in cold water than  
gypsum. Product of hickness  
and salt %  $> \text{ or } = 60$ .  
(without anionic divisions)

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