

# SHALLOW SANDY LOAM OVER CALCRETE

**General Description:** *Shallow calcareous loamy sand to sandy loam over calcrete.*

**Landform:** Gently undulating to undulating rises and low hills.

**Substrate:** Sheet or rubbly calcrete, grading to softer very highly calcareous material.

**Vegetation:** Mallee.



**Type Site:** Site No.: MO015

1:50,000 sheet: 6727-4 (Monarto)      Hundred: Mobilong  
 Annual rainfall: 350 mm      Sampling date: 1976  
 Landform: Upper slope in a landscape of undulating low hills, 5% slope  
 Surface: Soft with 2-10% calcrete stones

**Soil Description:**

<i>Depth (cm)</i>	<i>Description</i>
0-5	Dark brown massive soft calcareous sandy loam. Sharp to:
5-15	Reddish brown massive soft calcareous sandy loam with minor carbonate nodules (6-20 mm). Clear to:
15-55	Laminar calcrete. Gradual to:
55-100	White massive firm very highly calcareous sandy loam with 20-50% carbonate nodules. Diffuse to:
100-200	Semi hard carbonate. Diffuse to:
200-300	Reddish yellow soft very highly calcareous sandy loam.



**Classification:** Endohypersodic, Petrocalcic, Calcic Calcarosol; medium, slightly gravelly, loamy / -, very shallow

## Summary of Properties

- Drainage:** Rapidly drained. The soil rarely remains wet for more than a few hours.
- Fertility:** Inherent fertility is moderately low. Most nutrient retention capacity is attributable to organic matter, as clay content is low. Free carbonate in soil ties up phosphorus, copper, manganese and zinc, all of which may be deficient, along with nitrogen.
- pH:** Alkaline throughout.
- Rooting depth:** Not recorded. Estimate 55 cm in pit, but root density in calcrete is low.
- Barriers to root growth:**
- Physical:** The calcrete is the over-riding barrier, but variable root growth can occur in more rubbly forms.
  - Chemical:** High pH and very high carbonate content below calcrete restrict root growth.
- Water holding capacity:** Approximately 30 mm in the root zone.
- Seedling emergence:** Satisfactory.
- Workability:** Surface soil is easily worked, but stones abrade equipment.

## Erosion Potential

- Water:** Moderately low.
- Wind:** Moderately low.

## Laboratory Data

Depth cm	Coarse sand %	Fine sand %	Silt %	Clay %	pH H <sub>2</sub> O	CO <sub>3</sub> %	EC 1:5 dS/m	Cl mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Ca	Mg	Na	K	
0-5	45	39	2	8	8.3	2	0.19	114	13	9.3	1.4	1.1	0.71	8.5
5-15	48	37	1	9	8.5	1	0.16	138	12	8.3	1.7	0.88	0.49	7.3
55-100	19	13	1	4	8.8	62	3.00	5000	7	2.9	2.2	1.3	0.52	19
200-300	46	15	0	8	9.5	32	0.82	1500	8	3.0	1.9	2.1	0.66	26

**Note:** CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements. CEC at this site is estimated from the sum of exchangeable cations.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.