

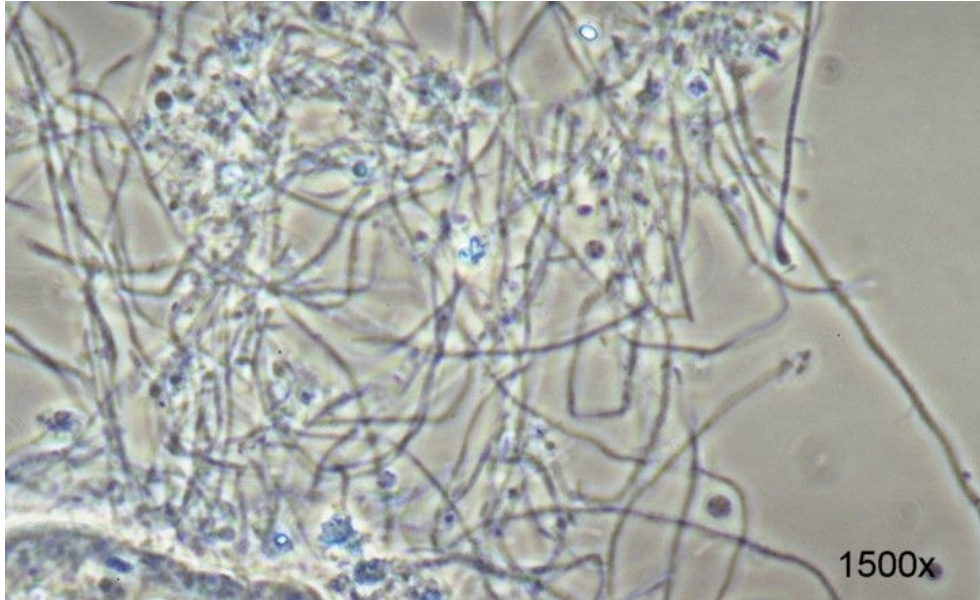
## Type IF-59

*Resembles:* "*Candidatus Microthrix calida*" [1], see remark

*Probes:* not available

*Frequency occurrence* (200 samples; 175 WTPs):

- observed with a FI  $\geq$  1 in 4 samples
- observed with a FI  $\geq$  3 in 4 samples



### *Characteristics*

- bent/coiled, tangled filaments;
- mainly inside the flocs;
- filament length > 200  $\mu\text{m}$ ;
- filaments not branched;
- not motile;
- cell diameter 0.3  $\mu\text{m}$ ;
- no sheath;
- hardly any attached growth;
- septa not visible;
- no sulphur storage;
- Gram negative;
- Neisser negative.

### *Remark*

Type IF-59 resembles "*Candidatus Microthrix calida*", but stains Gram negative and does not hybridise with probe MPAall-1410 or MPA-T1-1260 [1].

### *Physiology*

No information available.

### *Occurrence in activated sludge*

Type IF-59 was observed in WTPs treating wastewater from starch industries. Due to the limited number of observations, it is not possible, however, to draw final conclusions concerning a possible correlation of this morphotype with a specific wastewater.

**Control options**

Experience with controlling this filamentous morphotype is not available. See Type IF-4 lemma for general 'bulking control rules'.

**Reference**

1. Levantesi, C., S. Rossetti, K. Thelen, C. Kragelund, J. Krooneman, D. Eikelboom, P. H. Nielsen and V. Tandoi (2006) Phylogeny, physiology and distribution of "*Candidatus Microthrix calida*", a new *Microthrix* species isolated from industrial activated WWTPs. Accepted for publication in Environmental Microbiology

**Images**

Only one micrograph available, showing a floc intertwined by this morphotype