



>>Entry Name: Montmorillonite
ENTRY UNDER REVIEW

CAS Registry Number: 1318-93-0

Extra CAS Registry Numbers(s): 61029-13-8

$\text{Na}[\text{Al}_5\text{MgSi}_{12}\text{O}_{30}(\text{OH})_6]$

Molecular Formula: $\text{Al}_5\text{H}_6\text{MgNaO}_{36}\text{Si}_{12}$

Molecular Weight: 1101.254

Accurate Mass: 1099.469518

Source/Synthesis: Widely distributed clay mineral

Use/Importance: Adsorbs range of org. compds. esp. alcohols, glycols, ketones, nitriles. Modified pillared forms used as shape-selective catalysts

Physical Description: Dull white, grey, yellowish, greenish or pink solid

Other Data: Vol. increased several fold by adsorption of H_2O . Cation exchange capacity $0.6\text{--}1.5 \text{ eq kg}^{-1}$

Aldrich: 28152-2

Fluka: 69867

>>Derivative: Al-poor form

Synonym(s): Fuller's earth. Floridin

Use/Importance: Once used to clean wool and cloth (fulling); decolourizer for oils; filtering medium

>>Variant: Tantalum pillared-form

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Percentage Composition: Al 12.25%; H 0.55%; Mg 2.21%; Na 2.09%; O 52.30%; Si 30.60%

Source/Synthesis: Synth. by controlled hydrol. of $\text{Ta}(\text{OEt})_5$ in acidic EtOH and adding an aq. suspension of Na-Montmorillonite

Use/Importance: Dehydrates butanol to butene with 100% selectivity. First tantalum pillared clay which is stable at high temps.

Other Data: BET surface are $180 \text{ m}^2 \text{ g}^{-1}$ at 500° . 600 meq of acid sites

References:

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