

## **ENTROPY OF ADSORPTION OF CARBON MONOXIDE ON ENERGETICALLY HETEROGENEOUS SURFACES**

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Standard entropies of adsorption ( $\Delta s^0$ ) of CO on different materials (Cu catalysts, Au catalysts, ZnO and to TiO<sub>2</sub>) are obtained from static adsorption microcalorimetry, adsorption isobars and temperature-programmed desorption, based on the thermodynamics of adsorption on energetically heterogeneous surfaces. Vibrational entropies of the surfaces  $s_{\text{vib}}^{\sigma}$  are normally between the rotational and the standard translational entropy of CO in gas phase, and decrease with increasing adsorption energy, which agrees with the explanation of statistical thermodynamics.  $\Delta s^0$  reflects both the mobility of adsorbates and the specific adsorbate-adsorbent interaction. Limits for reasonable values of the entropy of adsorption are proposed.

**Keywords:** *entropy of adsorption, microcalorimetry, temperature-programmed desorption*

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