

HYDRODESULFURIZATION CATALYST FOR HYDROCARBON OIL,
PROCESS OF PRODUCING SAME AND METHOD FOR HYDROREFINING
ABSTRACT

The present invention provides a hydrodesulfurization catalyst exhibiting a high desulfurization activity when used for hydrotreating a hydrocarbon oil, particularly straight-run gas oil. The hydrodesulfurization catalyst is a catalyst produced by pre-sulfurizing a hydrodesulfurization catalyst Y comprising a support containing silica, alumina and titania and at least one type of metal component supported thereon and selected from VIA and VIII groups of the periodic table (comprising at least Mo), in which the total area of the diffraction peak area indicating the crystal structure of anatase titania (101) planes and the diffraction peak area indicating the crystal structure of rutile titania (110) planes in the support, measured by X-ray diffraction analysis being $1/4$ or less of the alumina diffraction peak area assigned to γ -alumina (400) planes, the molybdenum is formed into molybdenum disulfide crystal and disposed in layers on the support by the pre-sulfurization, and the molybdenum disulfide crystal layers having an average length of longer than 3.5 nm and 7 nm or shorter in the plane direction and an average number of laminated layers of more than 1.0

and 1.9 or fewer.

Fig. 1