According to the 2018 Table of Exposure Limits for Chemical and Biological Substances published by WorkSafe BC, which of these common lab solvents has the lowest Threshold Limit Value (TLV) of exposure?

A. Acetone
B. Dichloromethane
C. n-Hexane
D. Ethyl Acetate

WorkSafeBC publishes the exposure limit table in accordance with its mandate under the Workers Compensation Act to provide information and promote public awareness. Here are the Time Weighted Average (TWA) exposure limits of a few of the key lab solvents:

Solvent	**TWA exposure limit**
Acetone	250 ppm
n-Hexane	20 ppm
Dichloromethane	25 ppm
Methanol	200 ppm
Toluene	20 ppm
Ethyl Acetate	150 ppm
Diethyl Ether	400 ppm

Following inhalation exposure, n-hexane is absorbed into the circulation and transported to the liver, the major site of metabolism. In the liver, n-hexane is metabolized to various metabolites that are then distributed in the blood to various organs and tissues, including the liver, kidney, and brain. Many occupational and experimental exposure studies in humans have investigated the health effects following inhalation exposure to n-hexane. These studies (Sanagi et. al., 1980) indicate that the nervous system is the target of toxicity of n-hexane. Specifically, the targeted human studies show decreased MCV following exposure to n-hexane in the range of approximately 50–2500 ppm. Chronic n-hexane exposure produces a gradual sensorimotor neuropathy with demyelinating features. The most common initial complaint is numbness and tingling of the toes and fingers; a progressive loss of motor function may develop.

More information can be found at:

https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-05#EL_Table

https://www.osha.gov/chemicaldata/chemResult.html?RecNo=112

Sanagi, S; Seki, Y; Sugimoto, K; et al. (1980) Peripheral nervous system functions of workers exposed to n-hexane at a low level. Int Arch Occup Environ Health 47:69-79