Department of Defense Comments on 1,4-Dioxane Draft Toxicological Review IRIS Summary

Comments submitted by: Chemical Material Risk Management Directorate	Organization: Department of Defense	Date Submitted: 7/25/2013

*Comment categories: Science or methods (S); Editorial, grammar/spelling, clarifications needed (E); or Other (O). Also please indicate if Major i.e. affects the outcome, conclusions or implementation of the assessment.

Comment No.	Section	Pages	Comment	Suggested Action, Revision and References (if necessary)	*Category
Air Force			According to the most recent May 2013 update to the EPA Regional Screening Level (RSL) tables, EPA Regions do not characterize 1,4-dioxane as a volatile organic compound (VOC). The draft final EPA Vapor Intrusion Guidance (VIG) also does not list 1,4-dioxane as sufficiently volatile for assessment, nor does the EPA Vapor Intrusion Screening Level (VISL) Calculator, User's Guide. Available at: http://www.epa.gov/oswer/vaporintrusion/guidance.html. Thus, under RAGS, implementation of the RfC and IUR values for 1,4-dioxane is unclear. Specifically, the May 2013 RSL User's Guide indicates for tap water, "If the contaminant is not a volatile, only ingestion and dermal are considered." Thus, no water pathways are complete for inhalation of 1,4-dioxane. The EPA defines "volatile" as "VOCs, for the purpose of [RSL] guidance, generally are chemicals with a Henry's Law constant (HLC) greater than or equal to 1 x 10-5 atm-m3/mole and a molecular weight of less than 200 g/mole." The HLC of 1,4-dioxane is 0.0000048 atm-m3/mole, so it is	NCEA should consider not labeling 1,4-dioxane as a VOC, as this is inconsistent with EPA Region Screening Levels and the USEPA VIG. A section should be added (either to the existing factsheet or elsewhere) to explain the likely exposure pathways envisioned by EPA for 1,4-dioxane assessment. EPA should issue a FAQ or Q&A on exposure considerations for 1,4-dioxane to aid the reader in determining what is reasonable and relevant. Clarify in what exposure pathways the RfC and IUR are intended to be used. Exposure to consumer products is covered by the FDA, and workplace air exposures are covered by OSHA, so the need for the RfC and IUR remains unclear, given the physical properties of 1,4-dioxane.	S/M

			not volatile under EPA definition. Additionally, since EU (2002, cited by ATSDR 2012) indicates no inhalation releases have been documented from soil or water, the conceptual exposure model for 1,4-dioxane should be clarified by EPA for application of the IRIS RfC and IUR. Specifically, EU 2002 (available online at http://echa.europa.eu/documents/10162/676c3ad4-0683-4588-be68-345d30e9ee20) suggests that exposure pathways are either solely occupational (during drumming of liquid 1,4-dioxane) or during release from manufacturers through wastewater and air effluents at the sites where it is produced, processed, used, and via unintentional formation.		