

Trichloroethylene
Cl₂C=CHCl
[CAS No. 79-01-6]
Occupational sensitizer: Skin Group 1

Summary of classification

Since the 1990s, industrial solvent trichloroethylene (TCE) has been drawing attention as a causative agent of severe generalized dermatitis, i.e., hypersensitivity syndrome (HS). All patients suffered from generalized rash accompanying hepatitis, fever, leukocytosis, and lymphadenopathy after about one month of the occupational exposure. The skin manifestation was reportedly classified into four types: exfoliative dermatitis, erythema multiforme, Stevens-Johnson syndrome, and toxic epidermal necrolysis. Neither age nor gender differences were observed in the prevalence. Genetic polymorphism of

*HLA-B*13:01* was one of the susceptible alleles to the TCE HS. Experimental study in human populations showed that the 19 patients with TCE HS had a positive skin patch test for TCE and its metabolites (chloral hydrate, trichloroethanol, and trichloroacetic acid); however, 22 control healthy workers exposed to TCE for more than 12 weeks and 20 validation new workers exposed to the solvent for less than 12 weeks did not. Additionally, an animal study showed that both male and female guinea pigs reacted positively to TCE in the guinea pig maximization test. Thus, skin occupational sensitizer classification for TCE is proposed as group 1 based on the positive results of patch testing with TCE and its metabolites in TCE HS patients and guinea pig maximization test.

Year of proposal (revision): 2016

Year of proposal: 2015 (Group 2)