SAMPLING SOLUTIONS

For Isocyanates

Recognition

Isocyanates are compounds containing the chemical group (-NCO). They react with compounds containing hydroxyl groups to produce polyurethane polymers, which are compounds of polyurethane foams, thermoplastic elastomers (TPU), spandex fibers, polyurethane paints/coatings, and elastomers.[1] They are being used increasingly in the automotive industry, textiles, auto body repair, electronics, and building insulation materials (construction). Workplace exposure to isocyanates may cause irritation of the eyes and gastrointestinal and respiratory tracts, dermatitis, and respiratory and dermal sensitization. Workers who become sensitized to isocyanates may experience severe asthma attacks upon subsequent exposure.[2] At least 15 percent of all adult-onset asthma cases are associated with occupational exposure.[3]

SKC offers active solutions for sampling isocyanates in the workplace. SKC active samplers require an air sample pump to collect hazardous gases and vapors in air.

See the SKC equipment recommended for sampling isocyanates.

Evaluation with SKC Sampling Solutions

For over 60 years, SKC has led the research, design, and manufacture of quality sampling equipment and media to aid health and safety professionals in the evaluation of occupational and environmental hazards.

Choose from several SKC sampling solutions for isocyanates, including an air sample pump, samplers, and filter cassettes following agency methods and established protocols.

See reverse side for specific method and sampling equipment/media information.

Notice: This publication is intended for general information only and should not be used as a substitute for reviewing applicable government regulations, equipment operating instructions, or legal standards. The information contained in this document should not be construed as legal advice or opinion nor as a final authority on legal or regulatory procedures.

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Sample Collection

Active Air Sampling Solutions

Target Compound	Select Methods*	SKC Sample Collection Media and Cat. No.	SKC Sample Pump and Cat. No.	Notes
Diisocyanates: 2,4-TDI, 2,6-TDI	ASTM D5932	ISO-CHEK preloaded cassette 225-9022	AirChek TOUCH, Essential, Essential+, Connect	For simultaneous collection and separation of isocyanate vapor and aerosol phases.
HDI	ASTM D6561	ISO-CHEK preloaded cassette 225-9023		
	ASTM D6562	ISO-CHEK preloaded cassette 225-9022		
Isocyanates: HDI, HDI (homopolymer), IPDI, MDI, HMDI, PDI, TDI (2,4 and 2,6-isomers)	OSHA 5002	Preloaded filter cassette 225-9002 or 225-9013		A slight modification in filter preparation of 225-9002 allows for longer shelf-life. It is acceptable for use.
Isocyanates: TDI (isomers), MDI, HDI. NDI	NIOSH 5521	Impinger 225-36-1 and impinger trap 225-22		The mobile phase is a solution of acetylate excess reagent and evaporate toluene redissolved in 5 ml CH_3OH.
Isocyanates: TDI (2,4 and 2,6-isomers), MDI, HDI	NIOSH 5522			The mobile phase is a solution of acetonitrile (40 to 50%) and 0.6% sodium acetate buffer (60 to 50%).
Isocyanates, total	NIOSH 5525	Impinger 225-36-1 and and glass fiber filter 225-702		Filter must be chemically treated before sampling.

* Other methods may apply. SKC recommends those listed.

References:

[1] https://www.osha.gov/isocyanates

[2] CDC/NIOSH, https://www.cdc.gov/niosh/topics/isocyanates/

[3] OSHA National Emphasis Program: Occupational Exposure to Isocyanate

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