



HUMAN HEALTH AND PERFORMANCE

Exploring Space | Enhancing Life

Toxicology and Contamination Control Plans

The primary concern of the Space Toxicology community is protecting the health of the crewmembers by assessing potential chemical exposures during spaceflight and establishing safe environmental limits that will protect them while living and working in space.

World Renowned Skills and Unique Capabilities

Space toxicology is a unique and targeted discipline supporting human spaceflight. In order to maintain sustained occupation in space on the International Space Station (ISS), toxicological risks must be assessed and managed within the context of isolation, continuous exposures, reuse of air and water, limited rescue options, and the need to use highly toxic compounds for propulsion and other purposes. As we begin to explore other celestial bodies, in situ toxicological risks, such as inhalation of reactive mineral dusts, must also be managed.

This uniquely skilled team serves as the NASA-wide resource for space toxicology by assessing chemical toxicity to establish spacecraft maximum allowable concentrations (SMACs), spacecraft water exposure guidelines (SWEGs), assigning toxicity hazard levels to all compounds that could enter the habitable area of a spacecraft, performing offgas testing of flight hardware and whole modules, and monitoring and analyzing air quality in human space



vehicles. The Space Toxicology Office establishes requirements for air quality monitoring and also provides expertise to support cutting edge environmental monitoring technology development.

Johnson Space Center



For the benefit of all