



# *Uranium Hexafluoride*

## *Product Stewardship Summary*

Chemical Name:	Uranium Hexafluoride
Synonyms:	Uranium(VI) fluoride, hexafluorouranium; Uranium fluoride, hexafluoridouranium
CAS Number:	7783-81-5
EC (EINECS) Number:	232-028-6
Revision number:	1-2022

- **Chemical identification and uses:** Used to manufacture fuel for nuclear power; Uranium ore is produced from underground and open-pit mines. From the ores, uranium mills produce yellowcake, which is a complex mixture containing 80-96% uranium. The yellowcake is used to produce nuclear fuel. In the nuclear fuel cycle, yellowcake is converted into uranium hexafluoride gas, which is fed through centrifuges repeatedly to separate isotopes until uranium is enriched. The low-level enriched uranium is used for nuclear fuel while the highly enriched can be used in nuclear weapons. Its triple point (that is, the temperature and pressure that it can exist as solid, liquid, and gas at the same time) is easy to obtain, making it a useful intermediate for this purpose. It can be processed as a gas, pumped into and out of containers as a liquid, and stored as a solid.
- **Potential exposures:** Exposure to uranium hexafluoride can occur at facilities that handle this product or process uranium into uranium hexafluoride. Fumes or dust can be inhaled or may come in contact with the skin or eyes. Good manufacturing and industrial hygiene practices should be followed to prevent or reduce exposure. Workplace exposure limits for uranium hexafluoride have been established for use in worksite safety programs. See the Safety Data Sheet (SDS) for additional information. Because it readily breaks down when exposed to water, the general public is not likely be exposed to uranium hexafluoride.
- **Human Health hazards:** Uranium hexafluoride is corrosive to metals, skin and eye. It classified for acute toxicity and specific target toxicity to kidney upon single and repeated exposure per the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), and as such exposure should be minimized. The health effects of the release of free fluoride ion from this product is similar to that of hydrofluoric acid. Ingestion and significant inhalation exposure can cause severe systemic effects including hypocalcemia, hypomagnesemia and hyperkalemia resulting in electrolyte imbalance and cardiac arrhythmias. Although it can emit low levels of ionizing radiation, Uranium hexafluoride is a known human carcinogen by ACGIH. Uranium hexafluoride has not be determined to be a carcinogen by OSHA, NTP or IARC.
- One should refer to the Safety Data Sheet (SDS) for additional information and any specific protective information.
- **Environmental Health hazards:** It is toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- Please contact us at [PMTPSCustomerCare@Honeywell.com](mailto:PMTPSCustomerCare@Honeywell.com) for more information. Additional information may also be found at the following links:

[EPA – Uranium Hexafluoride](#)

[Pubchem – Uranium Hexafluoride](#)



*This product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of all health and safety information. Additional information on the chemical is available through the applicable Material Safety Data Sheet which should be consulted before use of the chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents. Statements concerning use of our products are made without warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.*