Iodine

Iodine is a chemical element with the symbol I and atomic number 53. The name is from the Greek ἰοειδής ioeidēs, meaning violet or purple, due to the color of elemental iodine vapor.

Iodine and its compounds are primarily used in nutrition, and industrially in the production of acetic acid and certain polymers. Iodine's relatively high atomic number, low toxicity, and ease of attachment to organic compounds have made it a part of many X-ray contrast materials in modern medicine. Iodine has only one stable isotope. Several iodine radioisotopes, such as 131I, are also used in medical applications.

Aqueous-based iodophors such as povidone-iodine solution (PVP-I) contain iodine complexed with a solubilizing agent that allows for the release of free iodine when in solution. Iodine acts in an antiseptic fashion by destroying microbial proteins and DNA. Iodophor-containing products enjoy widespread use because of their broad-spectrum antimicrobial properties, efficacy, and safety on nearly all skin surfaces in patients regardless of age. In the aqueous form, most commercially available iodophors require a 2-step application in a scrub-and-paint technique, and their activity is limited by the amount of time the agent is in contact with the skin.