Potassium Iodide

Radioactive Iodine (Radioiodine) is a major radioisotope constituent of both nuclear power plant accidents and nuclear bomb explosions and can travel hundreds of miles on the winds. Thyroid cancer attributable to Chernobyl Even very small amounts of inhaled or ingested radioiodine can do grave damage as it will always concentrate, and be retained, in the small space of the thyroid gland. Eventually giving such a large radiation dose to thyroid cells there that abnormalities are likely to result, such as loss of thyroid function, nodules in the thyroid, or thyroid cancer

Chernobyl has shown, and continues to reveal, that the greatest danger from radioiodine is to the tiny thyroid glands of children.

Health experts now estimate that the greatest health concerns affecting the largest number of people from a nuclear accident, or nuclear bomb explosion(s) anywhere in the world, will likely be from the release of radioiodine that is then carried downwind for hundreds of miles. While there will also be many other dangerous radioisotopes released along with radioiodine, if they are inhaled or ingested they are normally dispersed throughout a body and pose less of a risk than if they were to be concentrated into one small specific area of the body, like radioiodine is in the thyroid gland. So, as a plume or cloud of radioactive isotopes disperses with the wind its danger also diminshes, but much less quickly so for radioiodine because whatever little there is that's inhaled will always then be concentrated into that small space of the thyroid gland.

Taking either Potassium Iodide (KI) or Potassium Iodate (KIO3) before exposure will saturate (fill up) a persons thyroid gland with safe stable iodine to where there is no room for later uptake of radioactive iodine. Once the thyroid is saturated, then any additional iodine (radioactive or stable) that is later inhaled or ingested is quickly eliminated via the kidneys.

RDD (Radiological Dispersal Device). Radioactive Iodine is only produced by a fission or fusion weapon detonation or in a Nuclear Power Plant as a byproduct of that process. An RDD simply spreads around existing radioactive material and it's not very likely to have been composed of the relatively short half-life radioactive iodine. We'd more likely see used in an RDD a commercially abundant, and more easily obtained, isotope like Cobalt-60, Cesium-137 or uranium fuel rods, etc.