neurodermatitis without apparent connection to such contact

Experience indicates a difference in effect between the fumes of a low-nickel alloy, such as stainless steel, and the high-nickel alloys For control of the immediate effect, particular attention should be paid to the fumes and fine dust of the high-nickel materials

Additional data are required on the effects of exposure to measured concentrations of nickel fume and dust There is some difficulty in relating exposures to mixed nickel dusts in refining with those in welding and other operations Nickel and its salts are not absorbed through the skin in amounts sufficient to cause intoxication

Operations releasing nickel fumes or dust should be provided with local exhaust ventilation Contact with solutions of nickel salts should be avoided by appropriate handling procedures or protective clothing If contact does occur, the solution should be washed from the skin at once If sensitization occurs, the worker should avoid contact with all nickel compounds

Nickel carbonyl is produced during the Mond process for the refining of nickel It is a colorless liquid that gives off an unusually toxic vapor The poisoning is insidious since there is no particular discomfort during the exposure and the serious effects are delayed for a few hours to a few days The major changes are seen in the lungs, liver, and brain, and death is generally due to lung damage

The most comprehensive study of human poisonings by nickel carbonyl concerned 100 men who were accidentally exposed during the repair of a reactor in an oil refinery, 31 of whom were sufficiently poisoned to require hospitalization

These men typically showed dizziness, headache, and nausea, vomiting occurred in more than one-half of the hospitalized cases Most of them also felt a sense of constriction in the chest and shortness of breath The more severe delayed stage usually started with convulsive coughing, which appeared 10 hours to 8 days after the original exposure In this stage oxygen was required to maintain respiration in almost all cases Dimercaprol was considered life-saving in a number of these cases, it was given to all the patients Convalescence was greatly prolonged—two months after the episode, most of the men still felt exceptionally fatigued after exertion and showed unusually high pulse rates Urinary excretion of nickel was greatly increased in all these cases, and the dimercaprol increased it still more

Nickel carbonyl poisoning does not appear to be cumulative, and some tolerance is built up in animals by repeated exposures

The LD_{50} for 30 minutes of exposure varies from 10 to 270 ppm for various animals

Nicotine is an alkaloid most commonly obtained by extraction from tobacco It is extremely toxic, and in view of the fact that an average cigar contains twice the lethal dose for an adult, it is surprising that so few cases of nicotine poisoning come to light Probably one reason is that adults acquire tolerance very rapidly Certainly another is that exposures are relatively low Inhaling the dust in the dustiest operations in tobacco processing gives a dose about equal to the nicotine absorbed by smoking approximately five cigarettes per day

Various investigators have noticed the occurrence of mild nicotine poisoning in tobacco processing plants, particularly in nicotine extraction It usually occurs among new employees in the first few days of employment, before they become habituated to the exposure

Acute nicotine poisoning is commonly due to use of nicotine-base insecticides The nicotine is rapidly and completely absorbed either from ingested material or from material spilled on the skin or saturating the clothing The nausea, vomiting, and headache seen in mild poisoning are likely to be absent in acute poisoning, which is characterized by almost immediate collapse and death within 5 to 30 minutes

Since nicotine is volatile, respiratory protection from the free base can be obtained only with a hose mask or with a canister gas mask using an organic vapor canister The nicotine sulfate commonly used as an insecticide is not volatile

Nitric acid is a powerful oxidizing agent, usually shipped in glass It should be isolated from contact with reducing material or organic