

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
 - Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.
 - Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
 - A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
 - Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
 - Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]
- Consider complete blood count. Evaluate history of exposure.

CRITICAL SITES OF TOXICITY INCLUDE:

central nervous system, respiratory system, blood

GENERAL TOXICOLOGY KINETICS

Absorption by:

inhalation, ingestion, dermal contact, eye contact

Metabolism:

Major metabolites are phenol, catechol and hydroquinone. Minor metabolites include phenylmercapturic acid, benzene dihydrodiol, trans, trans muconic acid and hydroxyhydroquinone.

Distribution to:

widespread distribution, liver, blood, bone tissue, fat

Elimination route(s):

Exhaled through lungs, Excreted through kidneys (urine)

Half-Life:

Half-life in the whole body = 9-24 hrs

CLINICAL MANIFESTATIONS / CLINICAL EFFECTS

Overt clinical symptoms:

dermatitis, nausea, vomiting, abdominal pain, blistering of the skin

Effects - Head, Ear, Eye, Nose, Throat:

burning sensation upon contact, burning of mucous membranes

Cardiovascular:

no literature on cardiovascular effects

Neurological:

dizziness, headache, fatigue, loss of appetite, myelitis, euphoria, vertigo, ataxia, confusion, coma, convulsions

Respiratory:

bronchial irritation, laryngeal irritation, substernal pain, coughing, respiratory failure, pulmonary edema

Renal:

no literature in this area

Reproductive:

no literature in this area

Haematological:

haemolytic anemia, aplastic anemia, thrombocytopenia, leukopenia, granulocytopenia

LABORATORY TESTS / BIOLOGICAL MONITORING TESTS

	Whole Blood	Serum or Plasma	Urine
Normal	none detected	not established	<10 mg of phenol/L
Exposed	0.9 - 38.0 ug/L	not established	50 mg/g creatinine
Toxic	0.9 - 20 mg/L	not established	not established

Other Tissue

Benzene in exhaled air

Organ and system assessment requires:

Complete blood count

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