



**POISONS INFORMATION CENTER
CHRISTIAN MEDICAL COLLEGE, VELLORE**

INFORMATION LEAFLET – STYRENE

Category	INDUSTRIAL CHEMICAL
Name	Styrene
Physical description	Colorless to yellow aromatic oily liquid with a characteristic pungent odor Boiling point 145C Virtually insoluble in water Readily soluble in solvents Evaporates easily as a volatile organic compound
Mechanism of toxicity	HIGHLY TOXIC SUBSTANCE – call CMC Poison Information Center to discuss cases Mucous membrane irritant CNS depressant
Clinical Presentation	Routes of systemic exposure: Dermal, inhalation, ingestion and ocular Dermal: Irritation, itching, erythematous popular dermatitis followed by systemic toxicity Ocular: Pain, watering, conjunctivitis, oedema and photophobia, corneal burns and limbal ischemia (whitening/blanching around the edge of the cornea where it meets the sclera) may occur Respiratory: Dyspnea, cough, wheeze and pulmonary edema. Rapid systemic absorption Ingestion: Irritation to the pharyngeal and laryngeal mucosa. Systemic toxicity may occur Systemic effects CNS – Styrene sickness: Headache, dizziness, fatigue and ataxia Severe effects – Progressive loss of consciousness and coma CVS – Cardiac arrhythmias and pulmonary edema
Diagnosis	History of exposure with decreased sensorium and dyspnea
Management	
Decontamination	Dermal exposure: <ul style="list-style-type: none"> • Avoid self-contamination • Decontaminate after resuscitation • Perform decontamination in a well-ventilated area • Remove contaminated clothing, double bag, seal and store safely • Any adherent particulate matter on the skin must be carefully removed – adhesive tape may be used • DO NOT wipe the chemical liquid off the surface of the skin – this will hasten absorption • Use absorbent tissue pads and first blot off any liquid chemical from the wounds first and then unbroken skin • Pay particular attention to area like the axillae, behind the ears, groin and feet

	<ul style="list-style-type: none"> Wash patient with tepid water under low pressure with soap and water for at least 15 minutes. In mass casualty the washing time may be shortened to 3 minutes per patient <p>Ocular Immediately irrigate the affected eye thoroughly with 1000 mL 0.9% saline or equivalent crystalloid (for example via an infusion bag with a giving set) for a minimum of 10-15 minutes irrespective of initial conjunctival pH</p> <p>Inhalation: High flow oxygen</p> <p>Ingestion: Benefit of gastric decontamination is uncertain</p>
Dermal/ocular exposure	<p>Decontaminate patient</p> <p>Obtain urgent ophthalmology consult in patients with eye symptoms</p> <p>Monitor vital signs and cardiac rhythm; check the capillary blood sugar.</p> <p>Look</p> <p>All patients who require assessment should be observed for at least 4 hours after exposure.</p> <p>Consider discharge in asymptomatic patients after 4 hours, with advice to return if symptoms develop.</p> <p>Manage systemic toxicity as per inhalation (below)</p> <p>Other measures as indicated by the patient's clinical condition.</p> <p>Patients should be advised on discharge to seek medical attention if symptoms subsequently develop</p>
Inhalation/systemic toxicity	<p>Maintain clear airway and ensure adequate ventilation</p> <p>Administer oxygen to achieve adequate oxygenation.</p> <p>Monitor vital signs and cardiac rhythm; check the capillary blood sugar.</p> <p>Perform a 12-lead ECG in all patients who require assessment.</p> <p>Repeat 12-lead ECGs are recommended, especially in symptomatic patients.</p> <p>Check cardiac rhythm, QRS duration and QT interval.</p> <p>Observe all patients for at least 4 hours after exposure.</p> <p>In symptomatic patients perform a chest X-ray, blood gas analysis and a peak flow.</p> <p>Consider arterial blood gas analysis in patients who have a reduced level of consciousness (e.g. GCS less than 8) or have reduced oxygen saturation on pulse oximetry.</p> <p>Treat pulmonary oedema and/or acute lung injury with continuous positive airway pressure (CPAP) or in severe cases with invasive mechanical ventilation</p>
Ingestion	<p>Watch for upper airway edema/ obstruction: drooling, difficulty swallowing, dysphonia or stridor/ pooling of secretions</p> <p>Obtain early ENT evaluation in these patients and consider securing airway early</p> <p>Manage systemic toxicity as per inhalation (above)</p>
Antidotes	No known antidotes
Enhanced elimination	Dialysis/hemoperfusion ineffective

Disclaimer:

This information leaflet is for general guidance only and is not meant for medico-legal use. Please correlate clinically for further management.

Please contact CMC Poisons Information Center for further details

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