

Superior® Classic Smoke – for Air Flow Studies

For Professional Use Only

Superior® Classic Smoke is colored white to gray depending on atmospheric conditions and contains no explosive materials. It has excellent buoyancy characteristics.

The smoke has a particle size of 0.0001 to 0.000001 centimeters in diameter; however, thirty seconds after it has been generated, the particle size statistical distribution does not conform to the normal bell-shaped curve. This phenomenon is caused by the smoke being a mist rather than solids suspended in air. Superior® Classic Smoke is not a true smoke, but contains a large percentage of atmospheric moisture that provides high visual obscurity at low concentrations. The mist formation is seeded by zinc chloride and some other products of combustion such as free carbon. A minimum positive cloud would have a concentration of 10 mg/m³. The toxicity of the materials must be represented relative to the application and brief exposure time.

All smoke can be irritating to the breathing passages, and normally any irritation disappears once exposure has ceased. We recommend the use of self-contained breathing apparatus for exposure to dense concentrations or prolonged lighter concentrations. Of course, persons with respiratory ailments should not be exposed to any smoke, including ours.

Low concentrations of smoke usually provide the best conditions to visualize air flow without obscuring the objective. When an obscuring cloud is desired, allow the smoke generator to finish generating smoke and blend into a homogeneous mixture with room air, as this provides obscurity without creating excessive concentrations. Superior® Classic Smoke generators will produce an obscuring cloud of approximately the volume indicated (depending on conditions), and it is generally not recommended to use at significantly higher concentrations. Smoke Generators produce smoke during stated periods of time, however the smoke cloud will typically remain in suspension for 15 to 30 minutes if not ventilated or disbursed. **Always use the least amount of smoke necessary to accomplish the objective for your application.**

Superior Signal has been involved in the research, development and manufacture of smoke products for over fifty years, and would be pleased to be of further service.

SD-2A

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT INFORMATION

Product Identifier: Superior® Classic Smoke
Chemical Name: Screening Smoke
Product Use: Superior® Smoke for Air Flow Studies (Professional Use Only)

Manufacturer's information: SUPERIOR SIGNAL COMPANY LLC
PO Box 96, Spotswood, NJ 08884 USA

Emergency Phone # (732) 251-0800

Fax # (732) 251-9442

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SECTION 2: PRODUCT INGREDIENTS (SMOKE)

Neither TLV nor PEL applicable because product is intended for use in short term tests.

	TLV	PEL	8-hour time weighted average
Hydrated Zinc Chloride:	1 mg/m ³	1 mg/m ³	
Water Condensate:	-	-	
Carbon Monoxide:	55 mg/m ³	55 mg/m ³	

All other ingredients are present in negligible amounts and/or are non-hazardous.

Concentrations of the various smoke components depend entirely on the size of solid(s) burned, volume of the space and ventilation of the space. They are not independently predictable or knowable.

Superior® Classic Smoke products are available in various sizes that provide sufficient materials to create easily visible smoke for different sized areas at a concentration of 10 mg/m³.

Superior® #1A	-	4,000 ft ³ / 113 m ³
Superior® #2B	-	8,000 ft ³ / 227 m ³
Superior® #3C	-	40,000 ft ³ / 1133 m ³
Superior® #W3C	-	40,000 ft ³ / 1133 m ³

SECTION 3: PHYSICAL DATA (SMOKE)

Boiling Point:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Solubility in Water:	Soluble (Zinc Chloride)
pH:	No Data
Appearance and Odor:	Gray to white, with an odor of burning paper

SECTION 4: FIRE & EXPLOSION HAZARD DATA

(SMOKE):	Flash Point (method used):	None
	Auto Ignition:	Not Applicable
	Flammable limits in air:	Not Applicable

(SOLID PRODUCT): Extinguishing Media: Use media suitable for surrounding fire.

(SMOKE / SOLID PRODUCT): Normal fire fighting protective equipment: self-contained breathing apparatus and full protective clothing.

(SMOKE / SOLID PRODUCT): Unusual fire and explosion hazards: None Known

SECTION 5: REACTIVITY DATA (SOLID PRODUCT)

Stability: Stable under normal conditions
Hazardous decomposition products: See Section 2
Hazardous polymerization: None Known

SECTION 6: HEALTH HAZARD ASSESSMENT (SMOKE)

- **General:** Superior[®] Classic Smoke can be used without hazard if applied as directed. The main effects of the smoke are some irritation of the throat, an awareness of an odd odor, and the appearance of smoke. These effects act as a warning and are desirable to prevent voluntary overexposure. Individuals should be urged not to accept exposures that cause minor irritation, but to leave the area and ventilate well to dissipate the smoke.
- **Ingestion:** Not a significant route of exposure.
- **Eye Contact:** Acute exposure is not likely to induce eye irritation.
- **Skin Absorption:** Not a significant route of exposure.
- **Inhalation:** Acute exposure can cause irritation of the respiratory tract and mucous membranes. In itself irritation is not usually regarded as a toxic effect unless it is sufficient to cause inflammation and then inflammation, not irritation, is the toxic effect.
- **Effects of Overexposure:** Irritation of the respiratory passages; cough; nausea. Gross overexposure to dense smoke concentrations for periods of ten minutes or more could result in throat irritation and mucous membrane congestion requiring medical treatment. Coughs, chills, fever and pulmonary edema can result from overwhelming exposure. Increasingly severe overexposure is likely to result in increasingly severe irritation and inflammation to all mucous membranes contacted by the smoke with most severe effects usually appearing in the respiratory tract.

SECTION 7: EMERGENCY AND FIRST AID PROCEDURES

Remove victim to fresh air. If breathing is difficult, get medical attention.

SECTION 8: TOXICOLOGICAL PROPERTIES (SMOKE)

Carcinogen listed by: IARC (No) NTP (No) OSHA (No) OTHER (No)

SECTION 9: DISPOSAL METHOD

(SMOKE): Ventilate area. Use local exhaust to keep exposure to a minimum. The duration of smoke would be short and the length of exposure could be reduced further by opening doors and windows for a few minutes, if and when the smoke appears.

(SOLID PRODUCT): Disposal Method: Dispose in chemical disposal area in a manner that complies with local, state and federal regulations.

SECTION 10: PREPARATION OF THE MSDS

The information herein is given in good faith, but no warranty, express or implied, is made.

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