

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : GENERATOR SOLUTION A

Product Number : 09004

Supplier : Kam Controls, Inc.

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2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable liquid, Irritant, Carcinogen, Teratogen, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Skin sensitiser

Target Organs

Eyes, Kidney, Liver, Heart, Central nervous system, Blood, ears, Bone marrow, Cardiovascular system. Liver, Kidney, Blood, Eyes, ears, Heart, Bone marrow, Central nervous system, Cardiovascular system., Thyroid., Endocrine system., Skin, Reproductive system.

GHS Classification

Flammable liquids (Category 2)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Carcinogenicity (Category 2)
Reproductive toxicity (Category 1B)
Specific target organ toxicity - single exposure (Category 1)
Specific target organ toxicity - single exposure (Category 3)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)
H225 : Highly flammable liquid and vapour.

H301 + H311 Toxic if swallowed or in contact with skin.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H335 May cause respiratory irritation.
 H351 Suspected of causing cancer.
 H360 May damage fertility or the unborn child.
 H370 Causes damage to organs.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H401 Toxic to aquatic life.

Precautionary statement(s)

P201 Obtain special instructions before use.
 P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 P280 Wear protective gloves/ protective clothing.
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard: 3
 Chronic Health Hazard: *
 Flammability: 3
 Physical hazards: 0

NFPA Rating

Health hazard: 3
 Fire: 3
 Reactivity Hazard: 0

Health hazard: 3
 Fire: 3
 Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Causes respiratory tract irritation.
Skin Toxic if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Toxic if swallowed.
Aggravated Medical Condition May cause nervous system disturbances.,

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
Methanol			
67-56-1	200-659-6	603-001-00-X	> 10 - < 30 %
Chloroform			
67-66-3	200-663-8	602-006-00-4	> 10 - < 30 %
Xylene			
1330-20-7	215-535-7	601-022-00-9	> 30 - < 60 %
Imidazole			
288-32-4	206-019-2	-	> 10 - < 15 %
Sulphur dioxide			
7446-09-5	231-195-2	016-011-00-9	> 1 - < 5 %

Iodine			
7553-56-2	231-442-4	053-001-00-3	>= 0.5 - <= 1 %

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas, Hydrogen iodide, Hydrogen cyanide (hydrocyanic acid)

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Xylene	1330-20-7	TWA	100 ppm 435 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	100 ppm 435 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	150 ppm 655 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	100 ppm 434 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.			
		STEL	150 ppm 651 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.			
		TWA	100 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.			
		STEL	150 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.			
		TWA	100 ppm 435 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.			
		TWA	100 ppm 435 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	150 ppm 655 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
Methanol	67-56-1	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption			
		STEL	250 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see			

		BEI® section) Danger of cutaneous absorption		
		TWA	200 ppm 260 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		STEL	250 ppm 325 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		TWA	200 ppm 260 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.			
		TWA	200 ppm 260 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption			
		ST	250 ppm 325 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption			
Chloroform	67-66-3	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment Liver damage Embryo/fetal damage Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.			
		TWA	2 ppm 9.78 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	50 ppm 240 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.			
		ST	2 ppm 9.78 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A			
Sulphur dioxide	7446-09-5	STEL	5 ppm 13 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.			
		TWA	2 ppm 5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	5 ppm 13 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 ppm 13 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.			
		STEL	0.25 ppm	USA. ACGIH Threshold Limit Values (TLV)

			Pulmonary function Lower Respiratory Tract irritation Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
		TWA	2 ppm 5 mg/m3 USA. NIOSH Recommended Exposure Limits
		ST	5 ppm 13 mg/m3 USA. NIOSH Recommended Exposure Limits
Iodine	7553-56-2	C	0.1 ppm 1 mg/m3 USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	0.1 ppm 1 mg/m3 USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Remarks	The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.		
		C	0.1 ppm 1 mg/m3 USA. NIOSH Recommended Exposure Limits
		TWA	0.01 ppm USA. ACGIH Threshold Limit Values (TLV)
			Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid
Colour no data available

Safety data

pH no data available
Melting point/freezing point no data available

Boiling point	62 °C (144 °F) at 1,013 hPa (760 mmHg)
Flash point	6 °C (43 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	0.910 g/cm ³
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

acids, Acid chlorides, Acid anhydrides, Alkali metals, Strong oxidizing agents, Strong bases, Magnesium, Sodium/sodium oxides, Lithium, Zinc

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
 Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas, Hydrogen iodide, Hydrogen cyanide (hydrocyanic acid)
 Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

no data available

Inhalation LC50

Dermal LD50

Other information on acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Eyes: no data available

Respiratory or skin sensitization

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Germ cell mutagenicity

Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. The National Cancer Institute (NCI) has found clear evidence for carcinogenicity.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Xylene)

3 - Group 3: Not classifiable as to its carcinogenicity to humans (Xylene)

3 - Group 3: Not classifiable as to its carcinogenicity to humans (Sulphur dioxide)

NTP: Reasonably anticipated to be a human carcinogen (Chloroform)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Teratogenicity

Laboratory experiments have shown teratogenic effects.

Specific target organ toxicity - single exposure (Globally Harmonized System)

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Aggravated Medical Condition	May cause nervous system disturbances.,

Signs and Symptoms of Exposure

Central nervous system depression, Dermatitis, Anorexia., Shortness of breath, Bronchitis., Tremors, Blurred vision, Incoordination., Headache, Nausea, Vomiting, Dizziness, Weakness

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1992 Class: 3 (6.1) Packing group: II
Proper shipping name: Flammable liquids, toxic, n.o.s. (Xylene, Chloroform, Methanol)
Reportable Quantity (RQ): 0.6L
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 1992 Class: 3 (6.1) Packing group: II EMS-No: F-E, S-D
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Xylene, Chloroform, Methanol)
Marine pollutant: No

IATA

UN number: 1992 Class: 3 (6.1) Packing group: II
Proper shipping name: Flammable liquid, toxic, n.o.s. (Xylene, Chloroform, Methanol)

15. REGULATORY INFORMATION

OSHA Hazards

Flammable liquid, Irritant, Carcinogen, Teratogen, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Skin sensitiser

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Chloroform	67-66-3	2007-07-01
Sulphur dioxide	7446-09-5	2007-03-01

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Chloroform	67-66-3	2007-07-01
Xylene	1330-20-7	1989-08-11

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Chloroform	67-66-3	2007-07-01
Xylene	1330-20-7	1989-08-11
Sulphur dioxide	7446-09-5	2007-03-01
Iodine	7553-56-2	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Chloroform	67-66-3	2007-07-01
Xylene	1330-20-7	1989-08-11
Imidazole	288-32-4	
Sulphur dioxide	7446-09-5	2007-03-01
Iodine	7553-56-2	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Chloroform	67-66-3	2007-07-01
Xylene	1330-20-7	1989-08-11
Imidazole	288-32-4	
Sulphur dioxide	7446-09-5	2007-03-01
Iodine	7553-56-2	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Chloroform	67-66-3	2008-10-10

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No.	Revision Date
Chloroform	67-66-3	2008-10-10

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Kam Controls, shall not be held liable for any damage resulting from handling or from contact with the above product.
