1. PRODUCT AND COMPANY IDENTIFICATION

Product name : GENERATOR SOLUTION A

Product Number : 09004

Supplier : Kam Controls, Inc.

Address : 3939 Ann Arbor Drive
          Houston, TX  77063

Telephone : 713-784-0000
Fax : 713-784-0001
Emergency Phone # : 1-800-424-9300

E-mail address : sales@kam.com

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.
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

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>200-659-6</td>
<td>603-001-00-X</td>
</tr>
<tr>
<td>Chloroform</td>
<td>67-66-3</td>
<td>200-663-8</td>
<td>602-006-00-4</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>215-535-7</td>
<td>601-022-00-9</td>
</tr>
<tr>
<td>Imidazole</td>
<td>288-32-4</td>
<td>206-019-2</td>
<td>-</td>
</tr>
<tr>
<td>Sulphur dioxide</td>
<td>7446-09-5</td>
<td>231-195-2</td>
<td>016-011-00-9</td>
</tr>
</tbody>
</table>
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 (NOx), 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**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Xylene</strong></td>
<td>1330-20-7</td>
<td><strong>TWA</strong> 100 ppm 435 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TWA</strong> 100 ppm 435 mg/m³</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>STEL</strong> 150 ppm 655 mg/m³</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TWA</strong> 100 ppm 434 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
</tbody>
</table>

**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.

**Methanol** 67-56-1

<table>
<thead>
<tr>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TWA</strong> 100 ppm 435 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**

Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption

<table>
<thead>
<tr>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEL</strong> 150 ppm 651 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**

**TWA** 100 ppm 435 mg/m³

The value in mg/m³ is approximate.

<table>
<thead>
<tr>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TWA</strong> 100 ppm 435 mg/m³</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
</tr>
<tr>
<td><strong>STEL</strong> 150 ppm 655 mg/m³</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
</tr>
</tbody>
</table>

**Methanol** 67-56-1

<table>
<thead>
<tr>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TWA</strong> 200 ppm 841 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td>Chloroform</td>
<td>67-66-3</td>
<td>TWA</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>-----</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Sulphur dioxide</th>
<th>7446-09-5</th>
<th>STEL</th>
<th>5 ppm 13 mg/m³</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
</table>

**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.
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.

<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>USA. NIOSH Recommended Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 ppm 5 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ST 5 ppm 13 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Iodine 7553-56-2 C</td>
<td>0.1 ppm 1 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td>C 0.1 ppm 1 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

Remarks: The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.

<table>
<thead>
<tr>
<th></th>
<th>TWA 0.01 ppm</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
</table>

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/cm³
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 (NOx), 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)
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Xylene)
IARC: 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
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:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroform</td>
<td>67-66-3</td>
<td>2007-07-01</td>
</tr>
<tr>
<td>Sulphur dioxide</td>
<td>7446-09-5</td>
<td>2007-03-01</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
</tr>
<tr>
<td>Chloroform</td>
<td>67-66-3</td>
<td>2007-07-01</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>1989-08-11</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazards**
- Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
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<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>2007-07-01</td>
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<td>Chloroform</td>
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</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>1989-08-11</td>
</tr>
<tr>
<td>Sulphur dioxide</td>
<td>7446-09-5</td>
<td>2007-03-01</td>
</tr>
<tr>
<td>Iodine</td>
<td>7553-56-2</td>
<td>2007-03-01</td>
</tr>
</tbody>
</table>
Pennsylvania Right To Know Components

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

New Jersey Right To Know Components

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

California Prop. 65 Components

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