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**SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** Gene™ 404  
**PRODUCT CODES:** 55011, 55013, 55015, 55017, 55019  
**CHEMICAL FAMILY:** Organic  
**USE:** PVC Solvent Cement  
**MANUFACTURE / SUPPLIER**  
 RectorSeal  
 2601 Spenwick  
 Houston, Texas 77055 USA

**EMERGENCY TELEPHONE NUMBERS:**  
 Chemtrec 24 hours: (800) 424-9300  
 RectorSeal: (713) 263-8001

**NON EMERGENCY TELEPHONE NUMBERS:**  
 Technical Service: (800) 231-3345

**SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS**

HAZARDOUS COMPONENTS	APPROX					HMIS	NFPA
	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER LIMITS		
Methyl Ethyl Ketone	78-93-3	40 Max	200 ppm	200 ppm	300 ppm STEL	H3,F3,R0	H1,F3,R0
Tetrahydrofuran	109-99-9	20 - 60	200 ppm	200 ppm	250 ppm STEL	H2,F3,R1	H2,F3,R1
Cyclohexanone	108-94-1	20 - 60	25 ppm	25 ppm	N/D	H2,F2,R0	H1,F2,R0

**SECTION 3 HAZARDS IDENTIFICATION**

**SUMMARY OF ACUTE HAZARDS** Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.

<u>ROUTE OF EXPOSURE</u>	<u>SIGNS AND SYMPTOMS</u>	<u>PRIMARY ROUTE(S)</u>
<b>INHALATION:</b>	Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.	Yes
<b>EYE CONTACT:</b>	Severely irritating. If not removed promptly, will injure eye tissue, which can result in permanent damage.	Yes
<b>SKIN CONTACT:</b>	Frequent or prolonged contact may irritate and cause dermatitis. Low order of toxicity.	Yes
<b>INGESTION:</b>	Low order of toxicity. Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause bronchiopneumonia or pulmonary edema.	No

**SUMMARY OF CHRONIC HAZARDS:** Repeated or prolonged exposure may cause signs of central nervous system depression and respiratory irritation. This material has been shown to induce tumors in laboratory animals.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure.

**SECTION 4 FIRST AID MEASURES**

<b>INHALATION:</b>	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
<b>EYE CONTACT:</b>	Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
<b>SKIN CONTACT:</b>	Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing.
<b>INGESTION:</b>	If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

**SECTION 5 FIRE FIGHTING MEASURES**

**FLASH POINT:** 28°F (-2°C) SETA CC **FLAMMABILITY LIMITS:** LEL: 2% UEL: 11.8%

**EXTINGUISHING MEDIA:** Foam, dry chemical, carbon dioxide or water fog.

**SPECIAL FIRE FIGHTING PROCEDURES:** Wear self-contained full face piece breathing apparatus and other protective clothing. Hazardous decomposition products possible (see Section 10). Evacuate area. Dike fire control area as run-off may create additional fire hazard and environmental contamination. Cool heat exposed containers with water. If spill or leak has not ignited, use water spray to disperse vapors.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Extremely flammable – very low flash point. Vapors are heavier than air and may travel along ground or to low spots at considerable distance to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture closed containers.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup. Also, if product is subject to CERCLA reporting (see Section 15) notify the National Response Center.

**SECTION 7 STORAGE AND HANDLING**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames. If transferring this material to other containers, ground all containers to avoid static electricity buildup and discharge which may ignite flammable vapors.

**OTHER PRECAUTIONS:** Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all products precautions. Do not reuse empty containers. **KEEP OUT OF REACH OF CHILDREN.**

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

**RESPIRATORY PROTECTION (SPECIFY TYPE):** In confined, poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air respirators.

**VENTILATION – LOCAL EXHAUST:** Acceptable **Special:** Explosion proof equipment  
**MECHANICAL (GENERAL):** Preferable **OTHER:** N/A

**PROTECTIVE GLOVES:** Wear non-permeable gloves. **EYE PROTECTION:** Chemical splash goggles (ANSI Z-87.1 or equivalent)

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Coveralls recommended.

**WORK/HYGIENIC PRACTICES:** Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

**BOILING POINT:** 151°F (66°C) @ 760mm Hg

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 0.93

**VAPOR PRESSURE (mm Hg):** 140 @ 68°F (20°C)

**MELTING POINT:** N/A

**VAPOR DENSITY (AIR = 1):** 2.5

**EVAPORATION RATE (ETHYL ACETATE = 1):** 6

**SOLUBILITY IN WATER:** 50%

**APPEARANCE/ODOR:** Clear Liquid/Pungent Odor

**SECTION 10 STABILITY AND REACTIVITY**

**STABILITY:** Can form potentially explosive peroxides upon long standing in air.

**CONDITIONS TO AVOID:** Heat, sparks, open flames, and strong oxidizing, acidic and basic conditions.

**INCOMPATIBILITY (MATERIALS TO AVOID):** Oxidizers, acids and bases.

**HAZARDOUS DECOMPOSITION PRODUCTS:** CO, CO<sub>2</sub>, HCl and fragmented hydrocarbons.

**HAZARDOUS POLYMERIZATION:** Can occur in presence of cationic initiators such as selected Lewis Acids or strong proton acids.

**SECTION 11 TOXICOLOGY INFORMATION**

**CARCINOGENICITY:** NTP: No **IARC MONOGRAPHS:** No **OSHA REGULATED:** No

<b>SUBSTANCE</b>	<b>CAS NO.</b>	<b>LD50</b>	<b>LC50</b>
Methyl Ethyl Ketone	78-93-3	Oral-Rat LD50:2737 mg/kg	Inhalation-Rat LC50:23,500 mg/m <sup>3</sup> /8H
Tetrahydrofuran	109-99-9	Oral-Rat LD50:1650 mg/kg	Inhalation-Rat LC50:21,000 ppm/3H
Cyclohexanone	108-94-1	Oral-Rat LD50:1535 mg/kg	Inhalation-Rat LC50:8000 ppm/4H

**ADDITIONAL TOX INFORMATION:** Tetrahydrofuran – The National Toxicology Program has reported that exposures of mice and rats to THF vapor levels up to 1800 ppm 6hr/day, 5 days/week for their lifetime caused an incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health are unclear at this time, and may be related to “species specific” effects. Elevated incidences of tumors in humans have not been reported for THF.

**SECTION 12 ECOLOGICAL INFORMATION**

<b>SUBSTANCE</b>	<b>FOOD CHAIN CON POTENTIAL</b>	<b>WATERFOWL TOXICITY</b>	<b>BOD</b>	<b>AQUATIC TOXICITY</b>
Methyl Ethyl Ketone	None	N/A	214%	5640 mg/l/48 hr/bluegill/TLm/fresh water
Tetrahydrofuran	None	N/A	N/A	N/A
Cyclohexanone	None	N/A	N/A	N/A

**SECTION 13 DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL METHOD:** RCRA classified hazardous waste. Dispose of absorbed materials and liquid waste in accordance with all local, state and federal regulations.

**SECTION 14 TRANSPORTATION INFORMATION**

**DOT:** Adhesives, Class 3, UN 1133, PG II, ERG#127. Quarts and less: Consumer Commodity, ORM-D

**OCEAN (IMDG):** Adhesives, Class 3.2, PG II, IMDG#3174, EMS#3-05, MFAG#330

**AIR (IATA):** Adhesives, Class 3, UN 1133, PG II, ERG#127

**WHMIS (CANADA):** Class B-2

**SECTION 15 REGULATORY INFORMATION**

<b>SUBSTANCE</b>	<b>SARA 313</b>	<b>TSCA INVENTORY</b>	<b>CERCLA RQ</b>	<b>RCRA CODE</b>
Methyl Ethyl Ketone	Yes	Yes	5,000 lb.	U159
Tetrahydrofuran	No	Yes	1,000 lb.	U213
Cyclohexanone	No	Yes	5,000 lb.	U057

**SECTION 16 OTHER INFORMATION**

This document is prepared pursuant to the OSHA Hazardous Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, express or implied is made. Consult RectorSeal for further information: (713) 263-8001.