

County of Santa Clara
Department of Environmental Health
Hazardous Materials Compliance Division
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(408) 918-3400; Fax (408) 280-6479
www.EHinfo.org/hazmat

<i>Agency Use Only</i> <input type="checkbox"/> Approved; <input type="checkbox"/> Disapproved. Staff: _____; Date: _____ Fee Received: \$ _____; Date: _____ Receipt No.: _____; SR No.: _____; PE: _____

TOXIC GAS INSTALLATION APPLICATION

*For Use Within the Cities of Los Altos, Los Altos Hills, Monte Sereno, Saratoga, and in Unincorporated Areas of Santa Clara County
Authority Cited: Chapter XIV, Division B11, Santa Clara County Ordinance Code*

The Santa Clara County Toxic Gas Ordinance applies to facilities at which gases which are or may become toxic are found. The Toxic Gas Ordinance is administered by the Santa Clara County Department of Environmental Health - Hazardous Materials Compliance Division (HMCD).

These requirements are in addition to those of the Santa Clara County Building Department (i.e., Planning, Building, Plumbing and Electrical departments) and Fire Marshal's Office.

I. General Information

This document, accompanied by all required attachments, shall be completed and submitted along with the project plans. This Toxic Gas Application document is intended to serve as a general application for the installation of toxic gas systems and should not be considered all inclusive. Additional information may be required.

It is recommended that, at a minimum, the following documents be reviewed prior to submittal of this application:

- The Toxic Gas Ordinance (Santa Clara County Ordinance Code, Division B11, Chapter XIV);
- The version of the California Fire Code (CFC) currently adopted by Santa Clara County;
- The matrix, "Common Toxic Gases as Defined by the Toxic Gas Ordinance" (Unidocs Document No. UN-015).

It is also recommended that a copy of the Santa Clara County "Toxic Gas Ordinance Field Guide/Checklist" (Document No. HMCD-020) be obtained to assist in preparation for construction inspections.

The Toxic Gas Ordinance, Consensus Guidelines, matrix, and Field Guide/Checklist are available on the Internet at www.EHinfo.org/hazmat.

Please contact HMCD at (408) 918-3400 if you require assistance in filling out this application.

II. Project Information

Provide the following information:

A. Project/Facility:

Facility Name: _____ Bldg. No.: _____

Site Address: _____ City: _____ Zip: _____

Project Name : _____

Project Contact Name: _____ Phone No. (_____) _____ ext. _____

Fax No.: (_____) _____

B. Contractor:

Business Name of Primary Contractor: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

Contact Person: _____ Phone No. (____) _____ ext. _____
 Fax No.: (____) _____
 Mobile Phone No.: (____) _____
 Pager No.: (____) _____

C. Facility Owner:

Legal Name of Facility Owner: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

Plan Check No.: _____ TGO Installation Application Submittal Date: ____/____/____.

D. Timing and Scope of Work:

Proposed Installation Start Date: ____/____/____; Proposed Completion Date: ____/____/____.

Briefly Describe the Scope of Work: _____

III. Application Guidelines

A. Submittals

1. Prior to construction, four (4) copies of the project package and applicable fees must be submitted to the Santa Clara County Building Department located at 70 W. Hedding Street, 7th Floor, San Jose. Plans will be routed by the Building Department to the County Fire Marshal's Office.

(Important Note: At the time of plan submittal, a "Hazardous Materials Clearance Form" will be given to the applicant by the Building Department. This form must be filled out and returned to the Santa Clara County Building Department.)

2. In addition to the above, one (1) copy of the project package and applicable HMCD plan check fees shall be submitted directly to HMCD. (Note: Depending on the complexity of the project, a second copy of the plans may be requested by HMCD.)
3. HMCD fees are as follows: (Note: Fee amounts are adjusted annually on July 1st.)

Fee Type	Amount
TGO plan review (first 10 hours or any portion thereof):	\$1,204.00
Additional plan review (each hour beyond the initial 10 hours):	\$120.00 per hour.
Minor alteration to existing TGO facility (plan check and inspection billed hourly):	\$120.00 per hour.
Inspections:	\$120.00 per hour.
Fee for Permit to Operate:	\$79.00 per year.

B. Project Package Requirements

1. The Project Package for a facility that will contain toxic gases shall contain, at a minimum, Project Information, Drawings, and Specifications as described below:

a. Project Information:

The project information shall include the following:

- This Toxic Gas Installation Application;
- Project scope of work;
- Hazardous materials inventory by “Control Area” (i.e., A copy of the “Inventory for Building Occupancy Classification” submitted to the Building Department.);
- Toxic gas system control strategy/operating description;
- Exhaust treatment calculations.
- Other information as required.

b. Drawings:

- Plans may be prepared by an architect, draftsman, contractor, or owner. All plans shall be drawn in a professional manner.
- Plans shall be drawn to a minimum scale of 1/4 inch = 1 foot.
- Plans shall include a vicinity map showing cross streets, the nearest buildings, electrical lines, and other significant details.
- In addition to standard building, mechanical, electrical and control drawings, the following drawings and information shall be submitted:
 - Equipment P&ID drawings for all equipment or apparatus that uses, contains or generates toxic gases. At a minimum indicate equipment; gas source; piping; ducting; controls and control devices; alarm devices; utilities, including pressures and flows; etc.
 - Code compliance drawing sheet(s) detailing facility occupancy ratings, control areas, locations of hazardous materials storage and use areas and gas transport routes.
 - An Alarm/Control Matrix listing each input device and outputs.
Typical inputs: Gas sensors, seismic sensor, gas cabinet contacts, exhaust and treatment equipment, local Emergency Manual Off buttons, gas vault and room Emergency Manual Off buttons, fire alarm pull stations, etc.
Typical outputs (i.e., outcome/actions): Gas shut-off, local alarm signals (audible and visual), alarm signals to emergency control station, etc.

(Note: This Matrix shall be usable for field testing of devices and controls.)

- ### c. Specifications:
- In addition to standard construction specifications, manufacturer’s specifications (i.e., cut sheets) must be submitted for **all** equipment, materials, tanks, and piping.

2. Most toxic gases are listed by the State of California as acutely hazardous materials (AHMs). All AHM gases handled in any quantity are required by Santa Clara County to be registered. Contact HMCD for a list of AHM gases and an Acutely Hazardous Materials Registration Form. *(Note: AHM gases are subject to review, and a Risk Management and Prevention Plan (RMPP) may be required.)*
3. If full or partial closure of a facility that previously contained hazardous materials is to be done, a separate closure permit must be obtained from HMCD. *(Note: Demolition of areas that previously contained hazardous materials is considered a closure.)*

4. If any underground or aboveground tanks will be removed as part of the project, a separate tank closure permit application must be submitted to HMCD.
5. Approved plans are valid for six months. If construction is delayed more than six months, a new plan check and fee will be required.

IV. Installation Supplement - Class I, II, and III Materials

This information is intended to expedite the plan review and approval process. Failure to properly complete this section may result in delays and additional fees being assessed. Where appropriate, enter, on the line to the right of each item, the number of the page within your submitted plans on which the item asked for is described. Highlight the information in your plans. If an item is not applicable to this project, mark "N/A" on the "Submittal Page No." line. Calculations, brochures and/or manufacturers' cut sheets for all system components, and other required information shall be submitted as attachments to the plans.

1. Identify each control area inside (or adjacent to) the building where toxic gases are stored or used (control area as defined in the California Fire Code, Article 80). Submittal Page No.
 - 1) _____
 - 2) _____
 - 3) _____
 - 4) _____

Note: A maximum of 4 control areas are permitted within a building.

2. Identify each area outside your building where toxic gases are stored or used. Submittal Page No.
 - A) _____
 - B) _____

3. Complete the tables on the following pages shown in the example, below. List gases by building control area and outside storage area. List all toxic gases regardless of container size/quantity. Attach additional tables if necessary.

(EXAMPLE)

Control Area No.: _____

Gas & Formula	Conc. (%)	MHI	QTY. (lbs.)	Toxic Component wt. (lbs.)	DOT Class	IDLH* (ppm)	LC50** (ppm)	CFC Class	PEL (ppm)	TGO Class
Ammonia (NH ₃)	100	33,333	40	40	2.2 (NFG)	300	4,000	Corrosive, Flammable	50	II
Phosphine (Ph ₃ /Ar)	20% by volume, bal. Ar	500,000	20	4	2.3 (Poison Gas)	50	22	Highly Toxic, Pyrophoric	0.3	I

* Use IDLH for pure gases. If no IDLH is available for the gas, provide one of the following (in order of preference): LC50, LC10, LD50, or LD10, and indicate source of data.

** For gas mixtures, use LC₅₀

Control Area No.: _____

Gas & Formula	Conc. (%)	MHI	QTY. (lbs.)	Toxic Component wt. (lbs.)	DOT Class	IDLH* (ppm)	LC50** (ppm)	CFC Class	PEL (ppm)	TGO Class

Control Area No.: _____

Gas & Formula	Conc. (%)	MHI	QTY. (lbs.)	Toxic Component wt. (lbs.)	DOT Class	IDLH* (ppm)	LC50** (ppm)	CFC Class	PEL (ppm)	TGO Class

Control Area No.: _____

Gas & Formula	Conc. (%)	MHI	QTY. (lbs.)	Toxic Component wt. (lbs.)	DOT Class	IDLH* (ppm)	LC50** (ppm)	CFC Class	PEL (ppm)	TGO Class

Control Area No.: _____

Gas & Formula	Conc. (%)	MHI	QTY. (lbs.)	Toxic Component wt. (lbs.)	DOT Class	IDLH* (ppm)	LC50** (ppm)	CFC Class	PEL (ppm)	TGO Class

* Use IDLH for pure gases. If no IDLH is available for the gas, provide one of the following (in order of preference): LC50, LC10, LD50, or LD10, and indicate source of data.
 ** For gas mixtures, use LC50

Submittal
Page No.

- 4. Flow-restricting or flow-limiting devices* are installed for each DOT Poison A. _____
 Flow-restricting or flow-limiting devices are installed in the cylinder valve assembly or as close to the _____
 cylinders as possible.
 Manufacturer's cut sheets for flow-restricting or flow-limiting devices are included with this submittal. _____

- 5. For each Poison A location, the location is sprinklered with a system designed per NFPA Standard 13 _____
 (currently adopted edition) ordinary Hazard Group 2 to cover a 3,000 square foot area.
 Water reactive materials which require an alternative fire extinguishing system are clearly identified. _____

- 6. Methods for securing toxic gas storage/use areas are described. _____

- 7. SCBA storage locations for corrosive or Class I materials are identified. _____
 SCBA storage locations are clearly labeled. _____

- 8. Methods by which incompatible gases in the same control area will be separated are described. _____

- 9. Methods by which incompatible liquids or solids in the same control area as toxic gases will be separated _____
 are described.

- 10. A copy of the cylinder leak test procedures which will be implemented during delivery and departure of _____
 cylinders is included with this submittal.

- 11. A copy of the facility Emergency Response Plan listing on-site Emergency Response Team members and _____
 their positions with the company is included with this submittal.

- 12. For DOT Poison A gases, a gas detection system is employed which can monitor for them and alarm at _____
 PEL levels.

- 13. For **CYLINDERS**: N/A _____
 Plans indicate whether cylinders are stored in ventilated gas cabinets, exhausted enclosures, or separate _____
 ventilated gas rooms.
 If gas cabinets without exhaust ventilation to a treatment system are used, plans indicate that the room or _____
 area in which the cabinets are located will has a separate exhaust ventilation to a treatment system.
 Plans indicate that gas cabinets operate at negative pressure. _____

CYLINDERS *(Continued)*

Page No.

Manufacturer's cut sheets for gas cabinets, describing construction, doors, ventilation, access ports, purge panels, etc. are included with this submittal. _____

Manufacturer's cut sheets which specify the maximum flow rate from the cylinder orifices (including RFOs, if applicable) are included with this submittal. _____

A copy of the gas supplier's cylinder flow data sheet for each toxic gas (i.e., maximum flow of gas through the cylinder valve or RFO) is included with this submittal. _____

Calculations prepared by a professional engineer which demonstrate that the treatment system can reduce each exhausted gas to 1/2 IDLH during the maximum flow rate specified by the manufacturer are included with this submittal. *(Note: If flow rates are not available, assume a 5 minute release for a non-liquefied gas or a 30 minute release for a liquefied gas.)* _____

14. For **STATIONARY TANKS:** N/A

Plans indicate that tanks are stored within a separate ventilated room without other occupancy or use. _____

Flow rates from each valve/fitting are specified in plans _____

Highest flow rate is specified in plans _____

Plans specify whether flow rates include liquid flow rates for valves/fittings in direct contact with a liquefied gas. _____

A copy of the gas supplier's tank flow data sheet for each toxic gas (i.e., maximum flow of gas through the valve or RFO) is included with this submittal. _____

Calculations prepared by a professional engineer which demonstrate that the treatment system can reduce each exhausted gas to 1/2 IDLH during the maximum flow rate from the valve/fitting with the highest flow rate are included with this submittal. _____

15. For **PORTABLE TANKS:** N/A

Plans indicate that tanks are stored within a separate ventilated room without other occupancy or use. _____

Manufacturer's cut sheets which specify the maximum flow rate from each orifice (including RFOs, if applicable) are included with this submittal. _____

A copy of the gas supplier's tank flow data sheet for each toxic gas (i.e., maximum flow of gas through the tank valve or RFO) is included with this submittal. _____

Calculations prepared by a professional engineer which demonstrate that the treatment system can reduce each exhausted gas to 1/2 IDLH during the maximum flow rate specified by the manufacturer are included with this submittal. *(Note: If flow rates are not available, assume a 40 minute release for a non-liquefied gas or a 240 minute release for a liquefied gas.)* _____

16. Plans describe materials of construction for piping, valves, and related fittings. _____

17. Plans indicate where "No Smoking" signs will be located for both indoor and outdoor storage/use areas. _____

- 18. Plans clearly describe how dedicated inert gas purge systems will operate. _____
- 19. A description of how contaminated filters or other hazardous wastes produced by treatment systems will be disposed of is included with this submittal. _____

IV. Installation Supplement - Class I and II Materials

N/A

If this project does not involve any Class I or Class II Materials, check the "N/A" box, above and skip to Section VI.

- 20. For pressurized piping, plans indicate whether piping connections are welded or located within an exhausted enclosure. _____
- 21. For pressurized piping containing corrosives, plans indicate whether piping materials are inert OR if piping is secondarily contained. _____
- 22. For suction piping containing corrosives, plans indicate whether piping is equipped with a vacuum/pressure gauge and fail-safe-to-close valve on the high-pressure side which is activated by a loss of vacuum. _____
- 23. Plans show exit corridors, with locations of telephones, manual alarm stations, or other emergency signaling devices located at 150 foot intervals through exit corridors and at each exit doorway. _____
Plans indicate where signals from exit corridor emergency signaling devices will be routed. _____
- 24. Plans indicate that all cylinders will be equipped with seismic shut-off valves. _____
Manufacturer's cut sheets for seismic shut-off valves and seismic detectors are included with this submittal. _____
Plans specify the set-point at which seismic shut-off valves will be activated. _____
- 25. Manufacturer's cut sheets for a continuous gas detection system capable of alarming at gas PEL level are included with this submittal. _____
Plans indicate where alarm will be routed. (*Note: This must be a continuously staffed location.*) _____
- 26. Plans indicate how emergency power will be provided (e.g., diesel generator, etc.). (*Note: If emergency power will be provided by a new generator, a separate plan check of that system will be required.*) _____
Plans specify which systems will be provided with emergency power _____

27. Plans specify where manual gas shut-offs will be located. (*Note: These must be near points of use and source.*) _____

Plans indicate that manual gas shut-offs are of fail-safe-to-close design. _____

V. Installation Supplement - Class I Materials

N/A

If this project does not involve any Class I Materials, check the "N/A" box, above and skip to Section VI.

28. Plans describe secondary containment of product piping. _____

29. Plans indicate how secondary containment will direct exhaust to a treatment system. _____

30. Plans indicate how secondary containment is monitored with a continuous gas detection system. _____

31. Plans show that cylinders are equipped with an automatic shut-off valve of "fail-safe-to-close" design. _____

Plans describe conditions that will activate the shut-off valves _____

32. Plans list the signals/alarms which are directed to a constantly-attended remote station. _____

VI. Required Inspections

The following inspections are required for final permit approval, and must be scheduled with HMCD a minimum of 48 hours advance.

- System completion walk-through. Verification that all items indicated in construction plans are physically there, installed properly, and labeled;
- Functional test of monitoring/control systems and sensors with actual gas (or prior approved alternate) at PEL;
- Verification that emergency signals are sent to a continuously monitored location.

To ensure that you are prepared for these inspections, please take note of the following:

- The Santa Clara County "Toxic Gas Ordinance Field Guide/Checklist" (Document No. HMCD-020) should be filled out completely and reviewed prior to scheduling inspections.
- It is highly recommended that you schedule a preliminary walk-through with HMCD at least one (1) week prior to testing.
- An alarm testing plan is highly recommended. The Alarm/Control Matrix should be included in this testing plan.