

**State of California**

Division of Occupational Safety and Health  
Van Nuys District Office (0950643; 4046)  
6150 Van Nuys Boulevard, Suite 405  
Van Nuys, CA 91401

**Inspection Number:** 314827890  
**Inspection Dates:** 09/16/2011 - 02/07/2012  
**Issuance Date:** 02/08/2012  
**CSHO ID:** I4283  
**Optional Inspection Nbr:** 007-12



**Citation and Notification of Penalty**

**Company Name:** Strategic Sciences Inc.  
**Inspection Site:** 12349 Gladstone Ave., Sylmar, CA 91342

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**Citation 1 Item 1 Type of Violation: **Regulatory****

California Code of Regulations, Title 8, Section 461(a) - Permits to Operate

(a) Except during the time that a request for a permit remains unacted upon or as permitted in Section 461(f), no air tank shall be operated unless a permit to operate has been issued.

Reference :

California Code of Regulations, Title 8, Section 461(f) - Permits to Operate

(f) Air tanks having a volume of 1 1/2 cubic feet or less which have safety valves set to open at not more than 150 psi do not require permits to operate, but shall comply with all other provisions of these Orders, including construction. Air tanks used for self-contained breathing apparatus and having a volumetric capacity of 1 cubic foot or less and constructed, inspected, and maintained in accordance with DOT regulations do not require permits to operate.

Violation:

On and before 8/9/11, the employer utilized two pressure vessel tanks in the operation of an air compressor. No permit to operate had been issued for the tanks associated with Ingersoll Rand S/N: 0404160241 (located outside of the building at the south-east corner) and Coleman Powermate Compressors S/N: Z31412048 (located inside of the building, in the work area called "Area 51").

Date By Which Violation Must be Abated:

03/05/2012

Proposed Penalty:

\$ 250.00

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**Citation 1 Item 2 Type of Violation: General**

California Code of Regulations, Title 8, Section 5194(e)(1) - Hazard Communication

(e) Written Hazard Communication Program.

(1) Employers shall develop, implement, and maintain at the workplace a written hazard communication program for their employees which at least describes how the criteria specified in sections 5194(f), (g), and (h) for labels and other forms of warning, material safety data sheets, and employee information and training will be met, and which also includes the following:

(A) A list of the hazardous substances known to be present using an identity that is referenced on the appropriate material safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas);

(B) The methods the employer will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels), and the hazards associated with substances contained in unlabeled pipes in their work areas.

**Violation:**

On and before 8/9/11, the employer did not develop and implement a written Hazard Communication Program for employees using various compressed and flammable gases.

**Date By Which Violation Must be Abated:** 03/05/2012  
**Proposed Penalty:** \$ 465.00

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**Citation and Notification of Penalty**

**Company Name:** Strategic Sciences Inc.  
**Inspection Site:** 12349 Gladstone Ave., Sylmar, CA 91342

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**Citation 2 Item 1 Type of Violation: **Serious****

California Code of Regulations, Title 8, Section 5194(f)(1) - Hazard Communication  
(f) Labels and Other Forms of Warning.

(1) The manufacturer, importer, or distributor shall ensure that each container of hazardous substances leaving the workplace is labeled, tagged or marked with the following information:

- (A) Identity of the hazardous substance(s);
- (B) Appropriate hazard warnings; and

**Violation**

The three cylinders containing TyLar gas, shipped by Strategic Sciences Inc and located at Vanguard facility on 8/9/2011, were not labeled, tagged or marked as required.

**Date By Which Violation Must be Abated:** 03/05/2012  
**Proposed Penalty:** \$ 6750.00

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**Citation and Notification of Penalty**

**Company Name:** Strategic Sciences Inc.  
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**Citation 3 Item 1 Type of Violation: **Serious****

California Code of Regulations, Title 8, Section 3328(a)

(a) Machinery and equipment shall be of adequate design and shall not be used or operated under conditions of speeds, stresses, or loads which endanger employees.

**Violation:**

On and before 8/9/11, a pressure vessel specifically designed per manufacturer to store CNG (compressed natural gas), was used to store TyLar gas (alternative/experimental fuel, containing hydrogen and oxygen gases): TUFFSHELL "CNG ONLY" vessel S/N: 098-022, Model#: RB36B18-049LM.

**Date By Which Violation Must be Abated:** 03/05/2012  
**Proposed Penalty:** \$ 5400.00

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**Citation and Notification of Penalty**

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**Citation 4 Item 1 Type of Violation: **Serious****

California Code of Regulations, Title 8, Section 2340.1 Maintenance  
Electrical equipment shall be maintained free from recognized hazards that are likely to cause death or serious physical harm to employees.

**Violation:**

On and before 8/9/11, in the production area, non-insulated copper pipes were used as conductors on the output side of the ASTEC power supplies of the P4 generator used in the production of TyLar gas. The output current ranges from 12VDC at 75A to 6VDC at 150A.

**Date By Which Violation Must be Abated:** 03/05/2012  
**Proposed Penalty:** \$ 6750.00

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**Company Name:** Strategic Sciences Inc.  
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**Citation 5 Item 1 Type of Violation: **Serious****

California Code of Regulations, Title 8, Section 5194(g)(2) - Hazard Communication

(g) Material Safety Data Sheets.

(2) Each material safety data sheet shall be in English (although the employer may maintain copies in other languages as well) and shall contain at least the following information:

(A) The identity used on the label, and, except as provided for in section 5194(i) on trade secrets...

(C) The physical hazards of the hazardous substance, including the potential for fire, explosion, and reactivity...

(H) Any generally applicable precautions for safe handling and use which are known to the manufacturer, importer, or employer preparing the material safety data sheet, including the appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for cleanup of spills and leaks...

**Violation:**

On and before 8/9/11, the employer did not properly identify the components of the TyLar gas and its associated physical and chemical hazards as required.

**Date By Which Violation Must be Abated:**

**03/05/2012**

**Proposed Penalty:**

**\$ 5400.00**

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### Citation and Notification of Penalty

**Company Name:** Strategic Sciences Inc.  
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### Citation 6 Item 1 Type of Violation: **Serious**

California Code of Regulations, Title 8, Section 3203(a) Injury Illness Prevention Program

(a) Effective July 1, 1991, every employer shall establish, implement and maintain an effective Injury and Illness Prevention Program (Program). The Program shall be in writing and, shall, at a minimum:

(1) Identify the person or persons with authority and responsibility for implementing the Program.  
(2) Include a system for ensuring that employees comply with safe and healthy work practices. Substantial compliance with this provision includes recognition of employees who follow safe and healthful work practices, training and retraining programs, disciplinary actions, or any other such means that ensures employee compliance with safe and healthful work practices.

(3) Include a system for communicating with employees in a form readily understandable by all affected employees on matters relating to occupational safety and health, including provisions designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. Substantial compliance with this provision includes meetings, training programs, posting, written communications, a system of anonymous notification by employees about hazards, labor/management safety and health committees, or any other means that ensures communication with employees.

EXCEPTION: Employers having fewer than 10 employees shall be permitted to communicate to and instruct employees orally in general safe work practices with specific instructions with respect to hazards unique to the employees' job assignments as compliance with subsection (a)(3).

(4) Include procedures for identifying and evaluating work place hazards including scheduled periodic inspections to identify unsafe conditions and work practices. Inspections shall be made to identify and evaluate hazards.

(A) When the Program is first established;

EXCEPTION: Those employers having in place on July 1, 1991, a written Injury and Illness Prevention Program complying with previously existing section 3203.

(B) Whenever new substances, processes, procedures, or equipment are introduced to the workplace that represent a new occupational safety and health hazard; and

(C) Whenever the employer is made aware of a new or previously unrecognized hazard.

(5) Include a procedure to investigate occupational injury or occupational illness.

(6) Include methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazard:

(A) When observed or discovered; and,

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(B) When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, remove all exposed personnel from the area except those necessary to correct the existing condition. Employees necessary to correct the hazardous condition shall be provided the necessary safeguards.

(7) Provide training and instruction:

(A) When the program is first established;

EXCEPTION: Employers having in place on July 1, 1991, a written Injury and Illness Prevention Program complying with the previously existing Accident Prevention Program in Section 3203.

(B) To all new employees;

(C) To all employees given new job assignments for which training has not previously been received;

(D) Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;

(E) Whenever the employer is made aware of a new or previously unrecognized hazard; and,

(F) For supervisors to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed.

**Violation:**

**Instance 1**

The employer had not established, implemented, and maintained a written Injury and Illness Prevention Program which included all of the elements required by section 3203(a).

**Instance 2**

As of the 8/9/11 explosion, the employer had not corrected hazardous conditions that were previously identified in prior explosions. The employer continued to manufacture TyLar gas without protecting employees from explosion hazards and or incompatible mixtures, such as oxygen and hydrogen.

**Date By Which Violation Must be Abated:**

**03/05/2012**

**Proposed Penalty:**

**\$ 6750.00**

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**Citation 7 Item 1 Type of Violation: **Serious****

California Code of Regulations, Title 8, Section 5164(a) - Storage of Hazardous Substances

(a) Substances which, when mixed, react violently, or evolve toxic vapors or gases, or which in combination become hazardous by reason of toxicity, oxidizing power, flammability, explosibility, or other properties, shall be evaluated for compatibility before storing. Incompatible substances shall be separated from each other in storage by distance, or by partitions, dikes, berms, secondary containment or otherwise, so as to preclude accidental contact between them.

Note: Some typical examples of such incompatible substances are: Mineral acids and oxidizing agents; mineral acids and cyanides; oxidizing agents and combustible materials; acids and alkalis.

**Violation:**

On and before 8/9/11, compressed oxygen and hydrogen gases, known incompatibles, were stored together as ingredients of TyLar gas in pressurized vessels prior to use for testing, demonstrations, and/or shipment.

**Date By Which Violation Must be Abated:** 03/05/2012  
**Proposed Penalty:** \$ 6750.00

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**Citation and Notification of Penalty**

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**Citation 8 Item 1 Type of Violation: **Serious****

California Code of Regulations, Title 8, Section 5416(c) Flammable Vapors

(c) No source of ignition shall be permitted in any location, indoors or outdoors, where the concentration of the flammable gases or vapors exceeds or may reasonably be expected to exceed 25 percent of the lower explosive limit. Tests shall be made to ascertain that this limit is not exceeded before a source of ignition is introduced into such location, and such tests shall be repeated frequently (or a continuous indicator used) as long as conditions giving rise to such concentrations of flammable vapors or gases continue and a source of ignition is present. If electronic or thermal testing equipment is used, it must be approved for use in such flammable conditions as required by section 2540.2

**Violation:**

On 8/9/11, the employer was engaged in TyLar gas manufacturing and storage operations that could reasonably be expected to give rise to explosive environments, as shown by two previous explosions involving similar operations. Strategic Sciences Inc, did not ensure that all sources of ignition were eliminated from the work area. As a result two employees were seriously injured when a TyLar gas pressure vessel exploded.

**Date By Which Violation Must be Abated:** 03/05/2012  
**Proposed Penalty:** \$ 16200.00

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**Citation 9 Item 1 Type of Violation: **Serious****

California Code of Regulations, Title 8, Section 2540.3(a) Electrical Installations

- (a) Equipment, wiring methods and installations of equipment in hazardous (classified) locations shall be one or more of the following:
- (1) Intrinsically safe.
  - (2) Approved for the hazardous (classified) location.
  - (3) Safe for the hazardous (classified) location.

**Violation:**

On and before 8/9/11, the employer was conducting Class 1 Division 2 operations involving flammable TyLar gas in a work area where electrical installations of the building, equipment, and machinery used were not designed for the hazardous location.  
The MSDS prepared by an officer of Rainbow of Hope and Strategic Sciences Inc warns for installation of Class 1 electrical equipment in areas where TyLar gas is handled, yet the employer allowed employees to conduct TyLar gas research and manufacturing operations without such measures in place to prevent against accidental explosion hazards.

**Date By Which Violation Must be Abated:** 03/05/2012  
**Proposed Penalty:** \$ 6750.00



Compliance Officer/District Manager

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

**NOTICE OF ACCIDENT-RELATED VIOLATION AFTER INVESTIGATION**

Page 1 of 1

Strategic Sciences Inc.  
 900 Wilshire Blvd. #1500  
 Los Angeles, CA 90017

An investigation of an industrial accident or occupational illness was conducted by **Arsen Sanasaryan** at a place of employment located at **12349 Gladstone Ave., Sylmar** on **09/16/2011**.

DESCRIBE THE CONDITION INSPECTED:
The 08/09/11 TyLar gas explosion accident.

It has been determined by the Division that the fatal or serious injury, illness or exposure described above was related to the following serious, willful or repeat violation:

<u>Serious</u>	<u>5416(c)</u>
CLASSIFICATION OF VIOLATION	TITLE & CCP SECTION
Signature	Signature
Safety Engineer/Industrial Hygienist	District Manager

Date of issuance 02/08/2012      Date investigation completed 02/07/2012

Upon request, the Division will provide the employer with a copy of its inspection report pertaining to this investigation.

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Region	District	SE/IH Identification No.	Optional Report No.	CAL/OSHA Form 1 Report No.