



## Safety Data Sheet

### 1. Identification

**Product identifier** CIRCLESAFE® 778A

**Other means of identification** Not available.

**Recommended use** Non-destructive testing.

**Recommended restrictions** None known.

**Manufacturer / Importer / Supplier / Distributor information**

**Company name** Circle Systems, Inc.

**Address** 479 West Lincoln Ave.  
P.O. Box 1228  
Hinckley, IL 60520

**Telephone** 815-286-3271

**E-mail** customerservice@circlesafe.com

**Emergency phone number** Chem-tel 800-255-3924  
Contract# MIS0001649

### 2. Hazard(s) identification

**Physical hazards** Gases under pressure Compressed gas

**Health hazards** Reproductive toxicity Category 1B

**OSHA defined hazards** Not classified.

#### Label elements



**Signal word** Danger

**Hazard statement** Contains gas under pressure; may explode if heated. May damage fertility or the unborn child.

**Precautionary statement**

**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.

**Response** If exposed or concerned: Call a poison center/doctor.

**Storage** Protect from sunlight. Store in a well-ventilated place. Store locked up.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** Not classified.

### 3. Composition/information on ingredients

#### Mixtures

| Chemical name  | CAS number | %   |
|----------------|------------|-----|
| Carbon dioxide | 124-38-9   | < 5 |
| Iron oxide     | 12227-89-3 | < 5 |
| Boric acid     | 10043-35-3 | < 1 |

### 4. First-aid measures

**Inhalation** If symptoms develop move victim to fresh air. Get medical attention if symptoms persist.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** In the unlikely event of swallowing contact a physician or poison control center.

**Most important symptoms/effects, acute and delayed** High concentrations: Inhalation of propellant may cause respiratory irritation, dizziness, nausea, or drowsiness.

**Indication of immediate medical attention and special treatment needed**

Treat symptomatically. Symptoms may be delayed.

**General information**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media**

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media**

Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**

Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire-fighting equipment/instructions**

Containers should be cooled with water to prevent vapor pressure build up.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Keep unnecessary personnel away. Keep upwind. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation.

**Methods and materials for containment and cleaning up**

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the MSDS.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so.

## 7. Handling and storage

**Precautions for safe handling**

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Ground and bond containers when transferring material. Avoid inhalation of aerosols. Use only in well-ventilated areas. Do not re-use empty containers.

**Conditions for safe storage, including any incompatibilities**

Level 1 Aerosol.

Contents under pressure. Do not handle or store near an open flame, heat or other sources of ignition. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Protect from direct sunlight. Do not puncture, incinerate or crush. Store away from incompatible materials (see Section 10 of the MSDS).

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components                    | Type | Value    |
|-------------------------------|------|----------|
| Carbon dioxide (CAS 124-38-9) | PEL  | 5000 ppm |

**US. ACGIH Threshold Limit Values**

| Components                    | Type | Value               | Form                |
|-------------------------------|------|---------------------|---------------------|
| Boric acid (CAS 10043-35-3)   | STEL | 6 mg/m <sup>3</sup> | Inhalable fraction. |
| Carbon dioxide (CAS 124-38-9) | TWA  | 2 mg/m <sup>3</sup> | Inhalable fraction. |
|                               | STEL | 30000 ppm           |                     |
|                               | TWA  | 5000 ppm            |                     |

**US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)**

| Components                    | Type | Value                  |
|-------------------------------|------|------------------------|
| Carbon dioxide (CAS 124-38-9) | TWA  | 9000 mg/m <sup>3</sup> |
|                               |      | 5000 ppm               |

## US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)

| Components  | Type  | Value                        |
|---|---|------------------------------|
| Carbon dioxide (CAS 124-38-9)   | STEL  | 54000 mg/m3<br><br>30000 ppm |
| Biological limit values   | No biological exposure limits noted for the ingredient(s).  |                              |
| Appropriate engineering controls                                      | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. |                              |
| Individual protection measures, such as personal protective equipment |   |                              |
| Eye/face protection   | Wear safety glasses with side shields (or goggles).   |                              |
| Skin protection   |   |                              |
| Hand protection   | Wear protective gloves.   |                              |
| Other   | Wear suitable protective clothing.  |                              |
| Respiratory protection  | If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.   |                              |
| Thermal hazards   | Wear appropriate thermal protective clothing, when necessary.   |                              |
| General hygiene considerations  | When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.  |                              |

## 9. Physical and chemical properties

|   |   |
|---|---|
| <b>Appearance</b>                                   | Aerosol spray can - Pressurized Liquid. |
| <b>Physical state</b>                               | Liquid.                                 |
| <b>Form</b>   | Aerosol.                                |
| <b>Color</b>  | Dark green.                             |
| <b>Odor</b>   | Slight. Detergent like.                 |
| <b>Odor threshold</b>                               | Not available.                          |
| <b>pH</b>   | 8 - 9                                   |
| <b>Melting point/freezing point</b>                 | Not available.                          |
| <b>Initial boiling point and boiling range</b>      | Not available.                          |
| <b>Flash point</b>                                  | Not available.                          |
| <b>Evaporation rate</b>                             | Not available.                          |
| <b>Flammability (solid, gas)</b>                    | Not available.                          |
| <b>Upper/lower flammability or explosive limits</b> |   |
| <b>Flammability limit - lower (%)</b>               | Not available.                          |
| <b>Flammability limit - upper (%)</b>               | Not available.                          |
| <b>Explosive limit - lower (%)</b>                  | Not available.                          |
| <b>Explosive limit - upper (%)</b>                  | Not available.                          |
| <b>Vapor pressure</b>                               | Not available.                          |
| <b>Vapor density</b>                                | Not available.                          |
| <b>Relative density</b>                             | 1 (68 °F (20 °C))                       |
| <b>Solubility(ies)</b>                              | Soluble in water.                       |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                          |
| <b>Auto-ignition temperature</b>                    | Not available.                          |
| <b>Decomposition temperature</b>                    | Not available.                          |
| <b>Viscosity</b>                                    | Not available.                          |

## 10. Stability and reactivity

|                   |   |
|-------------------|---|
| <b>Reactivity</b> | The product is stable and non-reactive under normal conditions of use, storage and transport. |
|-------------------|---|

|   |   |
|---|---|
| <b>Chemical stability</b>                 | Stable under normal temperature conditions.                   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.   |
| <b>Conditions to avoid</b>                | Heat, flames and sparks. Contact with incompatible materials. |
| <b>Incompatible materials</b>             | Strong oxidizing agents.                                      |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.                |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |   |
|---------------------|---|
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.          |
| <b>Inhalation</b>   | May cause irritation to the respiratory system. |
| <b>Skin contact</b> | May cause skin irritation.                      |
| <b>Eye contact</b>  | May cause eye irritation.                       |

**Symptoms related to the physical, chemical and toxicological characteristics** High concentrations: Inhalation of propellant may cause respiratory irritation, dizziness, nausea, or drowsiness.

### Information on toxicological effects

|   |  |
|---|--|
| <b>Acute toxicity</b>                                     | Expected to be a low hazard for usual industrial or commercial handling by trained personnel.                    |
| <b>Skin corrosion/irritation</b>                          | Prolonged skin contact may cause temporary irritation.   |
| <b>Serious eye damage/eye irritation</b>                  | Direct contact with eyes may cause temporary irritation.   |
| <b>Respiratory sensitization</b>                          | Not a respiratory sensitizer.  |
| <b>Skin sensitization</b>                                 | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>                             | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>                                    | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.                                  |
| <b>Reproductive toxicity</b>                              | May damage fertility or the unborn child.  |
| <b>Specific target organ toxicity - single exposure</b>   | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.  |
| <b>Aspiration hazard</b>                                  | Not classified.  |
| <b>Chronic effects</b>                                    | Prolonged inhalation may be harmful.   |

## 12. Ecological information

|                                      |   |
|--------------------------------------|---|
| <b>Ecotoxicity</b>                   | Not expected to be harmful to aquatic organisms.  |
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.  |
| <b>Bioaccumulative potential</b>     | No data available for this product.   |
| <b>Mobility in soil</b>              | Not available.  |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose in accordance with all applicable regulations.       |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| <b>Contaminated packaging</b>                | Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.   |

## 14. Transport information

### DOT

|                                   |          |
|-----------------------------------|----------|
| <b>UN number</b>                  | UN1950   |
| <b>UN proper shipping name</b>    | AEROSOLS |
| <b>Transport hazard class(es)</b> | 2.2      |

Subsidiary class(es) -  
Packing group Not available.  
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

#### IATA

UN number UN1950  
UN proper shipping name AEROSOLS  
Transport hazard class(es) 2.2  
Subsidiary class(es) -  
Packing group Not available.  
Environmental hazards No  
Labels required 2.2  
ERG Code 10L  
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

#### IMDG

UN number UN1950  
UN proper shipping name AEROSOLS  
Transport hazard class(es) 2.2  
Subsidiary class(es) -  
Packing group Not available.  
Environmental hazards  
Marine pollutant No  
Labels required 2.2  
EmS F-D,S-U  
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

## 15. Regulatory information

#### US federal regulations

##### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

##### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

##### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - Yes  
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

##### SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|---------------|------------|----------|
| Formaldehyde  | 50-00-0    | < 0.1    |

#### Other federal regulations

##### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

##### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

#### US state regulations

##### US. Massachusetts RTK - Substance List

Carbon dioxide (CAS 124-38-9)

**US. New Jersey Worker and Community Right-to-Know Act**

Not regulated.

**US. Pennsylvania RTK - Hazardous Substances**

Carbon dioxide (CAS 124-38-9)

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

This product contains trace amounts of a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

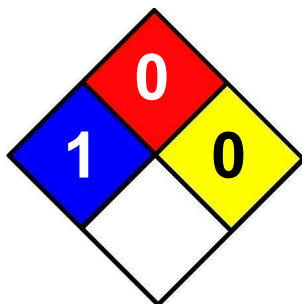
Formaldehyde (CAS 50-00-0)

**International Inventories**

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                     |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | No                     |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision****Issue date** 29-October-2013**Revision date** -**Version #** 01**NFPA Ratings****List of abbreviations**

TWA: Time weighted average.  
STEL: Short term exposure limit.

**References**

HSDB® - Hazardous Substances Data Bank

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