SAFETY DATA SHEET

1. Identification

Product identifier: CIRCLESAFE® 778A
Other means of identification: None.
Recommended use: Non-destructive testing.
Recommended restrictions: None known.
Manufacturer / Importer / Supplier / Distributor information:
   - Company name: Circle Systems, Inc.
   - Address: 1210 Osborne Road, Saint Marys, GA 31558
   - Telephone: 912-729-2735
   - E-mail: customerservice@circlesafe.com
   - Emergency phone number: Chem-tel 800-255-3924 (US & Canada); +1-813-248-0585 (International)

2. Hazard(s) identification

Physical hazards: Gases under pressure
Health hazards: Reproductive toxicity
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: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
     - Storage: Store locked up. Protect from sunlight. Store in a well-ventilated place.
     - 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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric Acid</td>
<td>10043-35-3</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>124-38-9</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Iron Oxide</td>
<td>1317-61-9</td>
<td>&lt;5</td>
</tr>
</tbody>
</table>

4. First-aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact: Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion
Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn’t get into the lungs. Get medical attention if symptoms occur.

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. If exposed or concerned: Get medical advice/attention.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

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. Local authorities should be advised if significant spillages cannot be contained.

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. The product is immiscible with water and will spread on the water surface. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift. Cover with plastic sheet to prevent spreading. 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 SDS.

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. 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 SDS).
8. Exposure controls/personal protection

Occupational exposure limits

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (CAS 124-38-9)</td>
<td>PEL</td>
<td>5000 ppm</td>
</tr>
</tbody>
</table>

US ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid (CAS 10043-35-3)</td>
<td>STEL</td>
<td>6 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>2 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Carbon dioxide (CAS 124-38-9)</td>
<td>STEL</td>
<td>30000 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5000 ppm</td>
<td></td>
</tr>
</tbody>
</table>

US NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (CAS 124-38-9)</td>
<td>STEL</td>
<td>54000 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30000 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>9000 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5000 ppm</td>
</tr>
</tbody>
</table>

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

Appearance
Physical state
Liquid.

Form
Aerosol.

Color
Dark green.

Odor
Slight. Detergent like.

Odor threshold
Not available.

pH
8-9

Melting point/freezing point
Not available.

Initial boiling point and boiling range
Not available.

Flash point
Not available.

Evaporation rate
Not available.

Flammability (solid, gas)
Not relevant.
Upper/lower flammability or explosive limits

- Flammability limit – lower (%): Not available.
- Flammability limit – upper (%): Not available.
- Explosive limit – lower (%): Not relevant.
- Explosive limit – upper (%): Not relevant.

Vapor pressure: Not available.

Vapor density: Not available.

Specific gravity: 1 (68°F (20°C))

Solubility(ies)
- Solubility (water): Soluble.

Partition coefficient (n-octanol/water): Not available.

Auto-ignition temperature: Not relevant.

Decomposition temperature: Not relevant.

Viscosity: Not available.

Other information
- VOC (Weight %): Not applicable.

10. Stability and reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability: Stable under normal temperature conditions.

Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.

Conditions to avoid: Heat, flames and sparks. Contact with incompatible materials.

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products: No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure
- Ingestion: Expected to be a low ingestion hazard.
- Inhalation: May cause irritation to the respiratory system.
- Skin contact: May cause skin irritation.
- Eye contact: 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

Acute toxicity: Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Components

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid (CAS 10043-35-3)</td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
</tr>
<tr>
<td>Butendioic acid, sulfo-1,4-bis(2-ethylhexyl) ester sodium salt (CAS 577-11-7)</td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Mouse</td>
</tr>
</tbody>
</table>

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

12. Ecological information

Ecotoxicity
   Not expected to be harmful to aquatic organisms.
Persistence and degradability
   No data is available on the degradability of this product.
Bioaccumulative potential
   No data available for this product.
Mobility in soil
   Not available.
Other adverse effects
   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

Disposal instructions
   Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations.

Waste from residues / unused products
   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).

14. Transport information

DOT
   UN number: UN1950
   UN proper shipping name: Aerosols Non-Flammable
   Transport hazard class(es): 2.2
   Subsidiary classes: -
   Label(s): Limited Quantity, Class 2.2
   Packing group: Y203
   Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
   Packaging exceptions: 306
   Packaging non-bulk: None.
   Packaging bulk: None.

IATA
   UN number: UN1950
   UN proper shipping name: Aerosols Non-Flammable
   Transport hazard class(es): 2.2
   Subsidiary class(es): -
   Label(s): Limited Quantity, Class 2.2
   Packing group: Y203
   Environmental hazards: No.
   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 Non-Flammable
Transport hazard class(es) 2.2
Subsidiary class(es) -
Label(s) Limited Quantity, Class 2.2
Packing group Y203
Environmental hazards
Marine pollutant No.
EmS Not available.
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
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt D)
Not regulated.

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Reportable quantity</th>
<th>Threshold planning quantity</th>
<th>Threshold planning quantity, lower value</th>
<th>Threshold planning quantity, upper value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>100</td>
<td>500 lbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SARA 311/312 Hazardous chemical</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SARA 313 (TRI reporting)</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Not regulated.

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.

US state regulations
US Massachusetts RTK - Substance List
Carbon dioxide (CAS 124-38-9)

US New Jersey Worker and Community Right-to-Know Act
Carbon dioxide (CAS 124-38-9)
Boric Acid (CAS 10043-35-3)
US Pennsylvania RTK - Hazardous Substances
Carbon dioxide (CAS 124-38-9)

US Rhode Island RTK
Not regulated.

US California Proposition 65
WARNING: This product does contain a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Formaldehyde (CAS 50-00-0)

International Inventories

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

*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

<table>
<thead>
<tr>
<th>Issue date</th>
<th>29-October-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>30-January-2019</td>
</tr>
<tr>
<td>Version #</td>
<td>03</td>
</tr>
<tr>
<td>HMIS® ratings</td>
<td>Health: 1</td>
</tr>
<tr>
<td></td>
<td>Flammability: 0</td>
</tr>
<tr>
<td></td>
<td>Physical hazard: 0</td>
</tr>
</tbody>
</table>

**NFPA Ratings**

- Health: 1
- Flammability: 0
- Physical hazard: 0

**List of abbreviations**

- LD50: Lethal Dose, 50%.
- PEL: Permissible exposure limit.
- STEL: Short term exposure limit.
- TWA: Time weighted average.

**References**

- HSDB® - Hazardous Substances Data Bank

**Disclaimer**

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