

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 Address	Circle Systems, Inc. 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	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: 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		
Chemical name	CAS number	%
Boric Acid	10043-35-3	<1
Carbon Dioxide	124-38-9	<5
Iron Oxide	1317-61-9	<5

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

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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.	

Occupational exposure limits			
US OSHA Table Z-1 Limits fo	r Air Contaminants (29 CFR 1910.10	00)	
Components	Туре	Value	
Carbon dioxide (CAS 124-38-9)	PEL	5000 ppm	
US ACGIH Threshold Limit V	alues		
Components	Туре	Value	Form
Boric acid (CAS	STEL	6 mg/m3	Inhalable fraction.
10043-35-3)	TWA	2 mg/m3	Inhalable fraction.
Carbon dioxide (CAS	STEL	30000 ppm	
124-38-9)			
	TWA	5000 ppm	
US NIOSH: Pocket Guide to (
Components	Type STEL	Value 54000 mg/m3	
Carbon dioxide (CAS 124-38-9)	SIEL	30000 ppm	
	TWA	9000 mg/m3 5000 ppm	
Biological limit values	No biological exposure limits noted	or the ingredient(s).	
Appropriate engineering controls	Good general ventilation (typically 1 should be matched to conditions. If or other engineering controls to main exposure limits have not been estab	applicable, use process enclosu ntain airborne levels below reco lished, maintain airborne levels	res, local exhaust ventilation mmended exposure limits. I
Eye/face protection	s, such as personal protective equi Wear safety glasses with side shield		
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 p	roperties		
Appearance			
Physical state	Liquid.		
Form	Aerosol.		
Color	Dark green.		
Odor	Slight. Detergent like.		
Odor threshold	Not available.		
рН	8-9		
Melting point/freezing point	Not available.		

range

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	
	Not applicable.

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 ef	fects		
Acute toxicity	Expected to be a low hazard for usual industrial or commercial handling by trained personnel.		
Components	Species	Test Results	
Boric acid (CAS 10043-35-3)			
Acute			
Dermal			
LD50	Rabbit	> 2000 mg/kg	
Oral			
LD50	Rat	2660 mg/kg	
Butendioic acid, sulfo-1,4-bis(2-e	thylhexyl) ester sodium salt (CAS 577-11-7)		
Acute			
Oral			
LD50	Mouse	2.64 g/kg	
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritatio	n.	

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

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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.		
ΙΑΤΑ			
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 N	Ion-Flammable			
Transport hazard class(es)	2.2				
Subsidiary class(es)	-				
Label(s)	Limited Qu	antity, Class 2.2			
Packing group	Y203	· · · , · · · · · ·			
Environmental hazards	1200				
	No.				
Marine pollutant					
EmS	Not availab				
Special precautions for user		•	• • •	cedures before handling	g.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This subst	ance/mixture is n	ot intended to be trans	ported in bulk.	
15. Regulatory information					
US federal regulations	Standard,	29 CFR 1910.12		d by the OSHA Hazard ory List.	Communication
TSCA Section 12(b) Export N	otification (4	40 CFR 707, Sub	opt D)		
Not regulated.		/ · · · · · · · · · · · · · · · · · · ·			
OSHA Specifically Regulated	Substances	s (29 CFR 1910. ⁻	1001-1050)		
Not listed.					
CERCLA Hazardous Substan	ce List (40 C	CFR 302.4)			
Not listed.					
Superfund Amendments and Re	authorizatio	n Act of 1986 (S	SARA)		
Hazard Categories	Immediate	Hazard – No			
C C	Delayed Ha	zard – Yes			
	Fire Hazard	I – No			
	Pressure H	azard – Yes			
	•	lazard – No			
SARA 302 Extremely hazardous	substance				
Chemical name CAS	number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Formaldehyde 50-00)-0	100	500 lbs		
SARA 311/312 Hazardous	Yes				
chemical					
SARA 313 (TRI reporting)					
SARA 313 (TRI reporting) Not regulated.					
SARA 313 (TRI reporting) Not regulated. Other federal regulations	140 Uooondo				
SARA 313 (TRI reporting) Not regulated. Other federal regulations Clean Air Act (CAA) Section	112 Hazardo	us Air Pollutan	ts (HAPs) List		
SARA 313 (TRI reporting) Not regulated. Other federal regulations Clean Air Act (CAA) Section 7 Not regulated.					
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SARA 313 (TRI reporting) Not regulated. Other federal regulations Clean Air Act (CAA) Section of Not regulated. Clean Air Act (CAA) Section of Not regulated. Safe Drinking Water Act (SDWA) US state regulations US Massachusetts RTK - Sub Carbon dioxide (CAS 124- US New Jersey Worker and C	Not regulate Not regulate Ostance List 38-9) Community F 38-9)	ental Release P ed.	revention (40 CFR 68.	130)	

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

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	30-January-2019
Version #	03
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA Ratings	
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
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