

SAFETY DATA SHEET

	1. Product and Company Ident	ification
Product identifier	Rx11-Flush Aerosol (4300-08, 4300-09, 4300	0-10, 4300-11)
Other means of identification	Not available	
Recommended use	Solvent cleaner for flushing AC and refrigeration	on systems
Recommended restrictions	None known.	
Manufacturer	Nu-Calgon 2008 Altom Court St. Louis, MO 63146 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTF	REC)
	2. Hazards Identification	n
Physical hazards	Gases under pressure	Liquefied gas
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Warning	
Hazard statement	Contains gas under pressure; may explode if h Causes serious eye irritation. Causes skin irritation. Harmful if swallowed. May cause respiratory irritation.	neated.
Precautionary statement		
Prevention	Wash thoroughly after handling. Wear eye/face Do not eat, drink or smoke when using this pro Avoid breathing gas. Use only outdoors or in a	oduct.
Response	easy to do. Continue rinsing. If eye irritation pe	treatment (see this label). If skin irritation occurs: inated clothing and wash it before reuse. I feel unwell. Rinse mouth.
	Protect from sunlight. Store in a well-ventilated place.	
Storage	Keep container tightly closed. Store locked up.	
Storage Disposal	Keep container tightly closed. Store locked up.	vith local/regional/national/international regulations.
-	Keep container tightly closed. Store locked up.	

3. Composition/Information on Ingredients

Mixture			
Chemical name	Common name and synonyms	CAS number	%
(E)-1,2-Dichloroethene		156-60-5	40 - 70
Ethane, 1,1,1,2-tetrafluoro-		811-97-2	10 - 30
Pentane, 1,1,1,2,2,3,4,5,5,5-decafluoro-		138495-42-8	10 - 30

#25548

Chemical name	Common name and synonyms	CAS number	%
Butane, 1,1,1,3,3-pentafluoro-		406-58-6	5 - 10
Composition comments	US GHS: The exact percentage (concentration) secret in accordance with paragraph (i) of §1910		vithheld as a trade
	4. First Aid Measures		
nhalation	If inhaled: Remove person to fresh air and keep center/doctor if you feel unwell.	comfortable for breathing.	Call a poison
Skin contact	If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.		
Eye contact	If in eyes: Rinse cautiously with water for severa easy to do. Continue rinsing. If eye irritation personal sector of the secto		
Ingestion	If swallowed: Call a poison center/doctor if you f	eel unwell. Rinse mouth.	
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, rednes cause redness and pain.	s, swelling, and blurred vis	sion. Skin irritation. May
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat s give oxygen. Keep victim warm. Keep victim unc	symptomatically. In case or der observation. Symptoms	f shortness of breath, s may be delayed.
General information	Ensure that medical personnel are aware of the protect themselves. In the case of accident or if (show the label where possible). Show this safet puncture or incinerate container. Do not store at	you feel unwell, seek medi ty data sheet to the doctor	ical advice immediately in attendance. Do not
	5. Fire Fighting Measures		
Suitable extinguishing media	Treat for surrounding material.		
Unsuitable extinguishing media	None known.		
Specific hazards arising from the chemical	Contents under pressure. Pressurized container containers with flooding quantities of water until self-contained breathing apparatus.		
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing in	ncluding self contained bre	eathing apparatus.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move c risk. Cool containers with flooding quantities of v cargo area, use unmanned hose holder or monit burn out.	vater until well after fire is o	out. For massive fire in
Specific methods	Cool containers exposed to flames with water un	ntil well after the fire is out.	
Hazardous combustion products	May include and are not limited to: Oxides of car	rbon.	
Explosion data			
Sensitivity to mechanical impact	Not available.		
Sensitivity to static discharge	Not available.		
	6. Accidental Release Measu	res	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep out of spill/leak. Wear appropriate protective equipmer damaged containers or spilled material unless w breathing gas. Ensure adequate ventilation. Loc spillages cannot be contained. For personal prot	nt and clothing during clear rearing appropriate protect al authorities should be ad	n-up. Do not touch ive clothing. Avoid lvised if significant
Methods and materials for containment and cleaning up	Extinguish all flames in the vicinity. Stop the flow gas has dispersed. Dike far ahead of spill for late divert vapor cloud drift. Prevent entry into watery	v of material, if this is witho er disposal. Use water spra	out risk. Isolate area un ay to reduce vapors or

Environmental precautions

divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage Precautions for safe handling Use only with adequate ventilation. Do not taste or swallow. Avoid breathing gas. Avoid contact with eyes, skin and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material. Store locked up. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Conditions for safe storage, including any incompatibilities Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children. Do not store at temperatures above 49 °C (120.2°F). Keep away from heat, open flames or other sources of ignition.

8. Exposure Controls/Personal Protection

Occupational exposure limits

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

Components	Туре	Value
(E)-1,2-Dichloroethene (CAS 156-60-5)	PEL	790 mg/m3
		200 ppm
US. ACGIH Threshold Limi	t Values	
Components	Туре	Value
(E)-1,2-Dichloroethene (CAS 156-60-5)	TWA	200 ppm
US. NIOSH: Pocket Guide t	o Chemical Hazards	
Components	Туре	Value
(E)-1,2-Dichloroethene (CAS 156-60-5)	TWA	790 mg/m3
· · · · · ·		200 ppm
US. AIHA Workplace Enviro	onmental Exposure Level (WEEL) Gu	
Components	Туре	Value
Ethane, 1,1,1,2-tetrafluoro- (CAS 811-97-2)	TWA	4240 mg/m3
		1000 ppm
logical limit values	No biological exposure limits noted	for the ingredient(s).
propriate engineering trols	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.	
ividual protection measures	, such as personal protective equipn	nent
Eye/face protection	Wear safety glasses with side shield	ds (or goggles).
Skin protection		
Hand protection	Rubber gloves. Confirm with a repu	utable supplier first.
Other	Wear appropriate chemical resistan	t clothing. As required by employer code.
Respiratory protection	In case of insufficient ventilation, we levels may be exceeded, use an ap	ear suitable respiratory equipment. Where exposure guideline proved NIOSH respirator.
Thermal hazards	Not applicable.	
neral hygiene siderations	after handling the product. Always c after handling the material and befo	oke. Wash hands and face before breaks and immediately observe good personal hygiene measures, such as washing re eating, drinking, and/or smoking. Routinely wash work o remove contaminants. When using do not eat or drink.

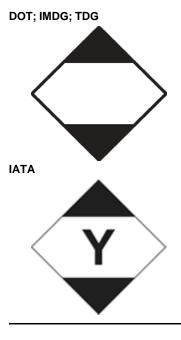
9. Physical and Chemical Properties

Appearance	Clear
Physical state	Gas.
Form	Liquefied gas. Aerosol
Color	Colorless
Odor	slight ether
Odor threshold	Not available.
рН	Not available.
Melting point/freezing point	Not available.

Initial boiling point and boiling range	105.8 °F (41 °C)	
Pour point	Not available.	
Specific gravity	Not available.	
Partition coefficient (n-octanol/water)	Not available.	
Flash point	Not available.	
Evaporation rate	Not available.	
Flammability (solid, gas)	Not applicable.	
Upper/lower flammability or exp	losive limits	
Flammability limit - lower (%)	> 5	
Flammability limit - upper (%)	< 14.4	
Explosive limit - lower (%)	Not available.	
Explosive limit - upper (%)	Not available.	
Vapor pressure	284 mm Hg	
Vapor density	3.4 (air = 1)	
Relative density	Not available.	
Solubility(ies)	0.4 g/100g H2O @ 20°C	
Auto-ignition temperature	Not available.	
Decomposition temperature	Not available.	
Viscosity	Not available.	
Other information		
Percent volatile	100 %	
VOC (Weight %)	697 g/l	
	10. Stability and Reac	tivity
Reactivity	Powdered metal. This product may react v	vith strong alkalies.
Possibility of hazardous reactions	No dangerous reaction known under cond	itions of normal use.
Chemical stability	Stable under recommended storage condi	
Conditions to avoid	(120.2°F).	containers are unstable at temperatures above 49°C
Incompatible materials	Strong oxidizing agents. Alkalis.	
Hazardous decomposition products	May include and are not limited to: Oxides	of carbon. Hydrogen fluoride.
	11. Toxicological Inform	nation
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye co	ntact.
Information on likely routes of e	xposure	
Ingestion	Harmful if swallowed.	
Inhalation	Prolonged inhalation may be harmful. May	cause irritation to the respiratory system.
Skin contact	Causes skin irritation.	
Eye contact	Causes serious eye irritation.	
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, r cause redness and pain.	edness, swelling, and blurred vision. Skin irritation. May
Information on toxicological effe	ects	
Acute toxicity	Harmful if swallowed. May cause respirate	bry irritation.
Components	Species	Test Results
(E)-1,2-Dichloroethene (CAS 156-	60-5)	
Acute		
Dermal	B 11 %	
LD50	Rabbit	5000 mg/kg

InhitabilityInhitability21723 ppm, 6 HoursOralX220 mg/kgDataX220 mg/kgLD50Rat2220 mg/kgNational ConstructionXauteInhitabilityXauteLC50Rat10000 ppm, 4 hoursOral2000 mg/kgDataXauteLD50Rat2000 mg/kgCaraXaute500000 ppmInhitabilityXauteLD50Rat500000 ppmOralXaute500000 ppmLD50Rat500000 ppmCaraXaute500000 ppmCaraXaute50000 mg/kgLD50Rat5000 mg/kgLD50Rat5000 mg/kgInhitabilityXaute5000 mg/kgLD50Rat5000 mg/kgLD50Rat5000 mg/kgLD50Rat5000 mg/kgLD50Rat5000 mg/kgLD50Rat5000 mg/kgLD50Rat5000 mg/kgSkin corresion/irritationCauses serious eye irritation.Exposure minutesNot available.YauteCorreal opacity valueNot available.YauteCorreal opacity valueNot available.YauteCorreal opacity valueNot available.YauteCorreal opacity valueNot available.YauteRespiratory or skin sensitizatorNot available.YauteRespiratory or skin sensitizatorNor available.YauteCorreal opacity valueNor avail	Components	Species	Test Results
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LD50Mouse2220 mg/kgRat1235 mg/kgButane, 1.1.1.3.2-pentafluoro-(CAS 406-86)	LC50	Mouse	21723 ppm, 6 Hours
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Butane, 1, 1, 1, 3, 3-pentafluoro- (CAS 406-58-6) Acute // Acute // Acute // Coson // Co	LD50	Mouse	
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Not available.	Chronic effects	Prolonged inhalation may be harmful.	
Name of Toxicologically	Further information		
		Not available.	

		12. Ecological Information	
Ecotoxicity	See below	1	
Components		Species	Test Results
(E)-1,2-Dichloroethene (CAS	156-60-5)		
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	120 - 160 mg/l, 96 hours
Persistence and degradability	No data is	available on the degradability of this proc	luct.
Bioaccumulative potential	No data av		
Mobility in soil	No data av		
Mobility in general	Not availal		
Other adverse effects			depletion, photochemical ozone creation
		endocrine disruption, global warming pote	
		13. Disposal Considerations	
Disposal instructions	hazardous contamina	uthorities before disposal. This material and s waste. Do not allow this material to drain the ponds, waterways or ditches with cher container in accordance with local/regional	n into sewers/water supplies. Do not nical or used container. Dispose of
Local disposal regulations	Dispose in	accordance with all applicable regulation	IS.
Hazardous waste code	The waste disposal c	0	etween the user, the producer and the waste
US RCRA Hazardous Waste	e U List: Ref	erence	
(E)-1,2-Dichloroethene (CAS 156-60-	5) U079	
Waste from residues / unused products	product re	f in accordance with local regulations. En sidues. This material and its container mu nstructions).	
Contaminated packaging	Empty con	ntainers should be taken to an approved v	vaste handling site for recycling or disposal. e, follow label warnings even after container is
		14. Transport Information	
U.S. Department of Transportation	ion (DOT)		
Basic shipping requirement			
UN number	UN1950		
Proper shipping name		non-flammable, (each not exceeding 1 L	capacity)
Hazard class		uantity - US	
Packaging exceptions	306		
Packaging non bulk	None		
Packaging bulk Transportation of Dangerous G	None	Canada)	
Basic shipping requirement	-	Callada)	
UN number	UN1950		
Proper shipping name		LS, non-flammable	
Hazard class		uantity - Canada	
Special provisions	80		
IATA/ICAO (Air)			
Basic shipping requirement	ts:		
	UN1950		
UN number		non-flammable	
Proper shipping name	Aerosols,		
	,	uantity - IATA	
Proper shipping name Hazard class ERG code	,	uantity - IATA	
Proper shipping name Hazard class ERG code IMDG (Marine Transport)	Limited Qu 2L	uantity - IATA	
Proper shipping name Hazard class ERG code IMDG (Marine Transport) Basic shipping requiremen	Limited Qu 2L ts:	uantity - IATA	
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Proper shipping name Hazard class ERG code IMDG (Marine Transport) Basic shipping requiremen	Limited Qu 2L ts: UN1950 AEROSOL		



15. Regulatory Information

Canadian federal regulations		sified in accordance with the hazard criteria of the Controlled Products contains all the information required by the Controlled Products
Canada CEPA Schedule I: Li	sted substance	
Butane, 1,1,1,3,3-pentaflu Ethane, 1,1,1,2-tetrafluoro Pentane, 1,1,1,2,2,3,4,5,5 138495-42-8) Canada SNAc Reporting Rec	o- (CAS 811-97-2) 5,5-decafluoro- (CAS	Listed. Listed. Listed.
Butane, 1,1,1,3,3-pentaflu Pentane, 1,1,1,2,2,3,4,5,5 138495-42-8) Canada WHMIS Ingredient D (E)-1,2-Dichloroethene (C	5,5-decafluoro- (CAS isclosure: Threshold limits	Listed. 11/29/2006 Listed. 11/29/2006 1 %

(E)-1,2-Dichloroethene	(CAS 150-00-5) 1 %
WHMIS status	Controlled
WHMIS classification	Class A - Compressed Gas, Class D - Division 2B

WHMIS labeling



This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical:	De minimis concentration
(E)-1,2-Dichloroethene (CAS 156-60-5)	1.0 %
US EPCRA (SARA Title III) Section 313 - Toxic Chemical:	Listed substance
(E)-1,2-Dichloroethene (CAS 156-60-5)	Listed.
TSCA Section 12(b) Export Notification (40 CFR 707, Sub	ot. D)
Pentane, 1,1,1,2,2,3,4,5,5,5-decafluoro- (CAS 138495-42-8)	1.0 % One-Time Export Notification only.
US CWA Section 307(a)(1) Toxic Pollutants: Listed substa	ince
(E)-1,2-Dichloroethene (CAS 156-60-5)	Listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	
(E)-1,2-Dichloroethene (CAS 156-60-5)	Listed.
US – CAA Mandatory Reporting of GHGs: Global warming	y potential (100 year)
Butane, 1,1,1,3,3-pentafluoro- (CAS 406-58-6)	794
Ethane, 1,1,1,2-tetrafluoro- (CAS 811-97-2)	1300
Pentane, 1,1,1,2,2,3,4,5,5,5-decafluoro- (CAS	1300
138495-42-8) Clean Air Act (CAA) Section 112(r) Accidental Poloces Br	overtion (40 CEP 69 120)
Clean Air Act (CAA) Section 112(r) Accidental Release Pro	evention (40 CFR 66.150)
Not regulated.	

 (E)-1,2-Dichloroether US - California Proposit Not listed. US - Illinois Chemical S (E)-1,2-Dichloroether US - Louisiana Spill Reg (E)-1,2-Dichloroether US - Minnesota Haz Sut (E)-1,2-Dichloroether Ethane, 1,1,1,2-tetra US - New Jersey RTK - 3 (E)-1,2-Dichloroether US - New York Release (E)-1,2-Dichloroether US - New York Release (E)-1,2-Dichloroether US - Texas Effects Scree (E)-1,2-Dichloroether Butane, 1,1,1,3,3-p Ethane, 1,1,1,2-tetra Pentane, 1,1,1,2,2,3 138495-42-8) US. Massachusetts RTF (E)-1,2-Dichloroether 	ne (CAS 156-60-5) iion 65 - Carcinogens & Repro- afety Act: Listed substance ne (CAS 156-60-5) porting: Listed substance ne (CAS 156-60-5) Substances: Listed substance ne (CAS 156-60-5) Reporting: Hazardous Substance ne (CAS 156-60-5) Reporting: Listed substance ne (CAS 156-60-5) ening Levels: Listed substance ne (CAS 156-60-5) pentafluoro- (CAS 406-58-6) fluoro- (CAS 811-97-2) ,4,5,5,5-decafluoro- (CAS K - Substance List ne (CAS 156-60-5) - Hazardous Substances ne (CAS 156-60-5)	Listed. ductive Toxicity (Listed. Listed. Listed. Jisted. Listed. Listed. nces: Listed subs Listed.	
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 (E)-1,2-Dichloroether US - California Proposit Not listed. US - Illinois Chemical S (E)-1,2-Dichloroether US - Louisiana Spill Reg (E)-1,2-Dichloroether US - Minnesota Haz Sut (E)-1,2-Dichloroether Ethane, 1,1,1,2-tetra US - New Jersey RTK - 3 (E)-1,2-Dichloroether US - New York Release (E)-1,2-Dichloroether US - New York Release (E)-1,2-Dichloroether US - Texas Effects Scre (E)-1,2-Dichloroether Butane, 1,1,1,3,3-p Ethane, 1,1,1,2-tetra Pentane, 1,1,1,2,2,3, 138495-42-8) 	ne (CAS 156-60-5) sion 65 - Carcinogens & Repro afety Act: Listed substance ne (CAS 156-60-5) borting: Listed substance ne (CAS 156-60-5) s: Listed substance ne (CAS 156-60-5) fluoro- (CAS 156-60-5) Reporting: Hazardous Substance ne (CAS 156-60-5) ening Levels: Listed substance ne (CAS 156-60-5) ening Levels: Listed substance ne (CAS 156-60-5) ening Levels: Listed substance ne (CAS 156-60-5) borting: Hazardous Substance ne (CAS 156-60-5) borting: Listed substance borting: Listed substan	Listed. ductive Toxicity (Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed. Listed.	
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(E)-1,2-Dichloroethe US - California Proposit	ne (CAS 156-60-5)	Listed.	(CRT): Listed substance
(E)-1,2-Dichloroethe	ne (CAS 156-60-5)	Listed.	
	us Substances (Director S): Li	sted substance	
US - California Hazardo	us Substances (Director's): Li	•	
US state regulations			ement Act of 1986 (Proposition 65): This material listed as carcinogens or reproductive toxins.
Administration (FDA)	Colifornio Cofo Drialda a Marta	r and Tavia Fafa	amont Act of 1096 (Decreatives OF). This rest, int
Food and Drug	Not regulated.		
Safe Drinking Water Act (SDWA)	Not regulated.		
Other federal regulations			
(E)-1,2-Dichloroethene		156-60-5	40 - 70
Chemical name		CAS number	% by wt.
SARA 313 (TRI reporting)			
SARA 311/312 Hazardous chemical	No		
hazardous substance			
SARA 302 Extremely	No		
	Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No		
riazai a vatogorios	Delayed Hazard - Yes		
Superfund Amendments and Re Hazard categories	authorization Act of 1986 (SA Immediate Hazard - Yes	KA)	
138495-42-8) Superfund Amondmonts and Po	authorization Act of 1086 (CA		
Ethane, 1,1,1,2-tetrafluor Pentane, 1,1,1,2,2,3,4,5,4		Listed. Listed.	
Butane, 1,1,1,3,3-pentaflu		Listed.	
,	ble Photochemical Activity: Lis	sted substance	
Pentane, 1,1,1,2,2,3,4,5,4 138495-42-8)	5,5-decafluoro- (CAS	Listed.	
Ethane, 1,1,1,3,3-pentar Ethane, 1,1,1,2-tetrafluor		Listed. Listed.	
Butane 11122-nontof	CAS 156-60-5) luoro- (CAS 406-58-6)	Listed. Listed.	
(E)-1,2-Dichloroethene (•		
	Program: Listed substance		
Not regulated. US CAA Section 612 SNAP I (E)-1,2-Dichloroethene (0	112 Hazardous Air Pollutants Program: Listed substance	、 ,	

Country(s) or region Canada

Inventory name

Non-Domestic Substances List (NDSL)

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory *A "Yes" indicates that all components of this product comply with the inventory requirement

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

LEGENDSevere4Serious3Moderate2Slight1Minimal0	HEALTH / 1 FLAMMABILITY 1 PHYSICAL HAZARD 1 PERSONAL PROTECTION X
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.
Issue date	29-January-2015
Effective date	15-January-2015
Expiry date	15-January-2018
Further information	For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.
Prepared by	Nu-Calgon Technical Service Phone: (314) 469-7000
Other information	This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This SDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.

16. Other Information