

SAFETY DATA SHEET

	1. Product and Company Ident	ification	
Product identifier	RX-11 - Flush Liquid (4300-30, 4300-38)		
Other means of identification	Not available		
Recommended use	Cleaner / Solvent		
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	Not classified.		
Health hazards	Acute toxicity, oral	Category 4	
	Acute toxicity, inhalation	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 Hazard statement	Warning Harmful if inhaled. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.		
Precautionary statement			
Prevention		e protection. Wear protective gloves. Do not eat, breathing mist or vapor. Use only outdoors or in a	
Response	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. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Specific treatment (see this label). Take off immediately all contaminated clothing and wash it before reuse. If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.		
Storage	Store in a well-ventilated place. Keep contained	r tightly closed. Store locked up.	
Disposal	Dispose of contents/container in accordance v	vith local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information	3% of the mixture consists of component(s) of	unknown acute inhalation toxicity.	
	3. Composition/Information on Ir	aredients	

WIXLUIE			
Chemical name	Common name and synonyms	CAS number	%
(E)-1,2-Dichloroethene		156-60-5	60-100
Pentane, 1,1,1,2,2,3,4,5,5,5-decafluoro-		138495-42-8	10-30

Chemical name	Common name and synonyms	CAS number	%		
Butane, 1,1,1,3,3-pentafluoro-		406-58-6	5-10		
Dimethyl carbonate		616-38-6	1-5		
Composition comments	US GHS: The exact percentage (concentration) secret in accordance with paragraph (i) of §1910		withheld as a trade		
	4. First Aid Measures				
Inhalation	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 irrita contaminated clothing and wash it before reuse.		advice/attention. Take of		
Eye contact	If in eyes: Rinse cautiously with water for several easy to do. Continue rinsing. If eye irritation personal several easy to do.	sists: Get medical advice/			
Ingestion	If swallowed: Call a poison center/doctor if you for	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 v	ision. 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 und	5 1 5			
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Use of an impervious apron is recommended.				
	5. Fire Fighting Measures				
Suitable extinguishing media	Treat for surrounding material.				
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this w	will spread the fire.			
Specific hazards arising from the chemical	Firefighters should wear a self-contained breathing apparatus.				
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.				
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.				
Specific methods	Use standard firefighting procedures and consid	er the hazards of other in	volved materials.		
General fire hazards	No unusual fire or explosion hazards noted.				
Hazardous combustion products	May include and are not limited to: Oxides of car	bon.			
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 low areas. Keep people away from and upwine spill/leak. Wear appropriate protective equipment and clothing during clean-up. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. A inhalation of vapors or mists. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see sec 8 of the SDS.				
Methods and materials for containment and cleaning up	Large Spills: Stop leak if you can do so without r possible. Cover with plastic sheet to prevent spr and place into containers. Use water spray to re entry into waterways, sewer, basements or conf with water.	eading. Absorb in vermic duce vapors or divert vap	ulite, dry sand or earth or cloud drift. Prevent		
	Small Spills: Wipe up with absorbent material (e remove residual contamination. Never return spi				
	Never return spills to original containers for re-us				

7. Handling and Storage		
Precautions for safe handling	Do not taste or swallow. Avoid breathing vapor. Avoid contact with eyes, skin and clothing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. 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. When using do not eat or drink. Keep container tightly closed.	
Conditions for safe storage, including any incompatibilities	Store locked up. Store in a closed container away from incompatible materials. Store in a well-ventilated place. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.	

8. Exposure Controls/Personal Protection

Occupational exposure limits

Components	Туре	Value
(E)-1,2-Dichloroethene (CAS 156-60-5)	PEL	790 mg/m3
· · · · ·		200 ppm
US. ACGIH Threshold Lim	it Values	
Components	Туре	Value
(E)-1,2-Dichloroethene (CAS 156-60-5)	TWA	200 ppm
US. NIOSH: Pocket Guide	to Chemical Hazards	
Components	Туре	Value
(E)-1,2-Dichloroethene (CAS 156-60-5)	TWA	790 mg/m3
. ,		200 ppm
logical limit values	No biological exposure limits noted f	or the ingredient(s).
propriate engineering htrols	should be matched to conditions. If a or other engineering controls to mair	D air changes per hour) should be used. Ventilation rates applicable, use process enclosures, local exhaust ventilation ntain airborne levels below recommended exposure limits. If lished, maintain airborne levels to an acceptable level.
ividual protection measure	s, such as personal protective equipm	ent
Eye/face protection	Wear safety glasses with side shield	S.
Skin protection		
Hand protection	Rubber gloves. Confirm with a repu	table supplier first.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. As required by employer code.	
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Avoid breathing mists or vapors.	
Thermal hazards	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Not applicable.	
neral hygiene nsiderations	When using, do not eat, drink or smo as washing after handling the materi wash work clothing and protective e	oke. Always observe good personal hygiene measures, such al and before eating, drinking, and/or smoking. Routinely quipment to remove contaminants. Wash hands before brea roduct. Handle in accordance with good industrial hygiene a sat or drink

9. Physical and Chemical Properties

Appearance	Clear
Physical state	Liquid.
Form	Liquid.
Color	Colorless
Odor	Slight Ethereal
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)	Slightly	
Auto-ignition temperature	Not av ailable.	
Decomposition temperature	Not av ailable.	
Viscosity	Not available.	
Other information		
Percent volatile	100 %	
VOC (Weight %)	966 g/l	
	10. Stability and Reactivit	y
Reactivity	May react with strong bases or oxidizing agents	s. Alkali metals. Powdered metal.
Possibility of hazardous reactions	Hazardous polymerization does not occur.	
Chemical stability	Stable under recommended storage conditions.	
Conditions to avoid	Do not mix with other chemicals. Keep away fro ignition.	om open flames, hot surfaces and sources of
Incompatible materials	Strong oxidizing agents. Bases. Oxidizers.	
Hazardous decomposition products	May include and are not limited to: Oxides of ca	arbon. Hydrogen fluoride.
	11. Toxicological Information	on
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.	
Information on likely routes of e	exposure	
Ingestion	Harmful if swallowed.	
Inhalation	Harmful if inhaled.	
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, rednes cause redness and pain.	ss, swelling, and blurred vision. Skin irritation. May
Information on toxicological eff	ects	
Acute toxicity	Harmful if inhaled. Harmful if swallowed. May ca	
Components	Species	Test Results
(E)-1,2-Dichloroethene (CAS 156-	60-5)	
Acute		
Dermal LD50	Rabbit	5000 mg/kg

Mouse

21723 ppm, 6 Hours

LC50

Inhalation

Components	Species	Test Results
Oral		
LD50	Mouse	2220 mg/kg
	Rat	1235 mg/kg
Butane, 1,1,1,3,3-pentafluoro- (CA Acute	S 406-58-6)	
Inhalation		
LC50	Rat	100000 ppm, 4 hours
Oral		
LD50	Rat	> 2000 mg/kg
Dimethyl carbonate (CAS 616-38-6	8)	
Acute		
Oral		
LD50	Mouse	6000 mg/kg
		6 g/kg
	Rat	13000 mg/kg
		13 g/kg
Pentane, 1,1,1,2,2,3,4,5,5,5-decafl	uoro- (CAS 138495-42-8)	
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Inhalation		
LC50	Rat	11100 ppm, 4 hours
Oral		
LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Corneal opacity value	Not available.	
Iris lesion value	Not available.	
Conjunctival reddening value	Not available.	
Conjunctival oedema value	Not available.	
Recover days	Not available.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitizati	on.
Germ cell mutagenicity	Non-hazardous by WHMIS/OSHA criteria.	
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.	
Carcinogenicity	No ingredients listed by IARC, ACGIH, NTP or OSHA	λ.
Reproductive toxicity	Non-hazardous by WHMIS/OSHA criteria.	
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.	
Specific target organ toxicity - single exposure	Respiratory tract irritation.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful.	
Further information	Not available.	
Name of Toxicologically Synergistic Products	Not available.	

		12. Ecologic	al Information	
Ecotoxicity	See below			
Components		Species		Test Results
(E)-1,2-Dichloroethene (CAS Aquatic	156-60-5)			
Fish	LC50	Bluegill (Lepon	nis macrochirus)	120 - 160 mg/l, 96 hours
Persistence and degradability	No data is a	available on the deg	gradability of this produ	ct.
Bioaccumulative potential	No data ava	ailable.		
Nobility in soil	No data ava	ailable.		
Nobility in general	Not availab	le.		
Other adverse effects				epletion, photochemical ozone creation ial) are expected from this component.
		13. Disposal (Considerations	
Disposal instructions	and its cont sewers/wat	ainer must be dispo er supplies. Do not Dispose of contents	osed of as hazardous w contaminate ponds, wa	licensed waste disposal site. This material vaste. Do not allow this material to drain into aterways or ditches with chemical or used be with local/regional/national/international
Local disposal regulations	Dispose in	accordance with all	applicable regulations.	
Hazardous waste code	The waste disposal co		igned in discussion bet	ween the user, the producer and the waste
US RCRA Hazardous Waste	U List: Refe	rence		
(E)-1,2-Dichloroethene (CAS 156-60-5)	U079	
Waste from residues / unused products		idues. This materia		ty containers or liners may retain some t be disposed of in a safe manner (see:
Contaminated packaging	Empty cont	ainers should be ta		ste handling site for recycling or disposal. follow label warnings even after container i
		14. Transpo	rt Information	
U.S. Department of Transportati Not regulated as dangerous g Transportation of Dangerous G	joods. oods (TDG - (Canada)		
Not regulated as dangerous g	100ds.			
		15. Regulato	ry Information	
Canadian federal regulations		and the SDS cont		ne hazard criteria of the Controlled Products required by the Controlled Products
Canada CEPA Schedule I: L	isted substa	nce		
Butane, 1,1,1,3,3-pentafl Pentane, 1,1,1,2,2,3,4,5, 138495-42-8)			Listed. Listed.	
Canada SNAc Reporting Re	quirements:	Listed substance/	Publication date	
Butane, 1,1,1,3,3-pentafl Pentane, 1,1,1,2,2,3,4,5, 138495-42-8)			Listed. 11/29/2006 Listed. 11/29/2006	
Canada WHMIS Ingredient	Disclosure: T	hreshold limits		
(E)-1,2-Dichloroethene (C	CAS 156-60-5)	1 %	
WHMIS status	Controlled			
WHMIS classification	Class D - D	ivision 2B		
WHMIS labeling				
\bigcirc				
US federal regulations		et is a "Hazardous (9 CFR 1910.1200.	Chemical" as defined by	the OSHA Hazard Communication

US EPCRA (SARA Title III) S	Section 313 - Toxic Chemical	· De minimis conce	ntration
(E)-1,2-Dichloroethene (C		1.0 %	
US EPCRA (SARA Title III) S	,	I: Listed substance	
(E)-1,2-Dichloroethene (C TSCA Section 12(b) Export		Listed. bpt. D)	
Pentane, 1,1,1,2,2,3,4,5,4 138495-42-8)			Export Notification only.
US CWA Section 307(a)(1) T			
(E)-1,2-Dichloroethene (C CERCLA Hazardous Substa	nce List (40 CFR 302.4)	Listed.	
(E)-1,2-Dichloroethene (C Dimethyl carbonate (CAS US – CAA Mandatory Repor	616-38-6)	Listed. Listed. ng potential (100 yea	ar)
Butane, 1,1,1,3,3-pentaflı Pentane, 1,1,1,2,2,3,4,5, 138495-42-8)		794 1300	
Clean Air Act (CAA) Section	112(r) Accidental Release F	Prevention (40 CFR	68.130)
Not regulated. Clean Air Act (CAA) Section	112 Hazardous Air Pollutar	nts (HAPs) List	
Not regulated.			
US CAA Section 612 SNAP	0		
(E)-1,2-Dichloroethene (C	,	Listed. Listed.	
Butane, 1,1,1,3,3-pentafl Pentane, 1,1,1,2,2,3,4,5,	. ,	Listed.	
138495-42-8)			
US CAA VOCs with Negligib	le Photochemical Activity: I	_isted substance	
Butane, 1,1,1,3,3-pentafl	. ,	Listed.	
Dimethyl carbonate (CAS Pentane, 1,1,1,2,2,3,4,5,4 138495-42-8)	,	Listed. Listed.	
Superfund Amendments and Re	authorization Act of 1986 (S	ARA)	
Hazard categories	Immediate Hazard - Yes	,,	
	Delayed Hazard - No Fire Hazard - No Pressure Hazard - No		
SARA 302 Extremely hazardous substance	Reactivity Hazard - No No		
SARA 311/312 Hazardous chemical	No		
SARA 313 (TRI reporting) Chemical name		CAS number	% by wt.
(E)-1,2-Dichloroethene		156-60-5	60-100
Other federal regulations			
Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)	Priority pollutant		
Safe Drinking Water Act (SDWA)	Not regulated.		
Food and Drug Administration (FDA)	Not regulated.		
US state regulations			ement Act of 1986 (Proposition 65): This material isted as carcinogens or reproductive toxins.
US - California Hazardo	us Substances (Director's):	Listed substance	
(E)-1,2-Dichloroethe US - California Proposit	ne (CAS 156-60-5) ti on 65 - Carcinogens & Rep	Listed. roductive Toxicity (CRT): Listed substance
Not listed.			
	afety Act: Listed substance		
(E)-1,2-Dichloroethe Dimethyl carbonate ((CAS 616-38-6)	Listed. Listed.	
	borting: Listed substance	1.1.1	
(E)-1,2-Dichloroethe Dimethyl carbonate (Listed. Listed.	
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us	Minnesota Haz Subs: Listed substance		
	(E)-1,2-Dichloroethene (CAS 156-60-5) • New Jersey RTK - Substances: Listed substance	Listed.	
US	(E)-1,2-Dichloroethene (CAS 156-60-5) Dimethyl carbonate (CAS 616-38-6) • New York Release Reporting: Hazardous Substa	Listed. Listed. nces: Listed substance	
	(E)-1,2-Dichloroethene (CAS 156-60-5) • Texas Effects Screening Levels: Listed substance	Listed.	
	(E)-1,2-Dichloroethene (CAS 15 6-60-5) Butane, 1 ,1,1,3,3-pentafluoro- (CAS 406 -58-6) Dimethyl carbonate (CAS 616-38-6) Pentane, 1,1,1,2,2,3,4,5,5,5-decafluoro- (CAS 138495-42-8)	Listed. Listed. Listed. Listed.	
US.	Massachusetts RTK - Substance List		
US.	(E)-1,2-Dichloroethene (CAS 156-60-5) Dimethyl carbonate (CAS 616-38-6) Pennsylvania RTK - Hazardous Substances	Listed. Listed.	
US.	(E)-1,2-Dichloroethene (CAS 156-60-5) Dimethyl carbonate (CAS 616-38-6) Rhode Island RTK	Listed. Listed.	
	(E)-1,2-Dichloroethene (CAS 156-60-5)	Listed.	
Inventory sta	atus		
Country	(s) or region Inventory name		On inventory (yes/no)*
Canada	Domestic Substances List (DS	SL)	Yes

Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
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*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

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	20-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.