PAGE: 1 DATE: 03/30/98 ACCT 742982001 INDEX: N/A CAT NO: AC106772500 PO NBR: N/A **** MATERIAL SAFETY DATA SHEET **** 1-Bromobutane, 99% 96286 **** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION **** MSDS Name: 1-Bromobutane, 99% Catalog Numbers: AC106770000, AC106770010, AC106772500 Synonyms: 1-Bromobutane. Company Identification: Acros Organics N.V. One Reagent Lane Fairlawn, NJ 07410 For information in North America, call: 800-ACROS-01 For emergencies in the US, call CHEMTREC: 800-424-9300 **** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS **** -----..... CAS# EINECS# **Chemical Name** % 99% 203-691-9 109-65-9 BUTYL BROMIDE Hazard Symbols: XI Risk Phrases: 10 37 **** SECTION 3 - HAZARDS IDENTIFICATION **** EMERGENCY OVERVIEW Appearance: clear vary light yellow. Flash Point: 13 deg C. Warning! Flammable liquid. The toxicological properties of this material have not been fully investigated. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. Target Organs: None. **Potential Health Effects** Eye: May cause eye irritation. May cause conjunctivitis. Skin: Causes skin irritation. May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. Chronic: No information found. **** SECTION 4 - FIRST AID MEASURES **** Eves: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately. Skin: Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear. Notes to Physician: Treat symptomatically and supportively. Antidote: No specific antidote exists. **** SECTION 5 - FIRE FIGHTING MEASURES **** General Information: General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical toam. For small lifes, use factor in chemical foam. Autoignition Temperature: 265 deg C (509.00 deg F) Flash Point: 13 deg C (55.40 deg F) NFPA Rating: health-2; flammability-3; reactivity-0 Explosion Limits, Lower: 2.60 vol % Upper: 6.60 vol %

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INDEX:	N/A		LAT NO:	AC10677250	D PO NB	R: N/A
	**** 550	TION 6 -	ACCIDENTA	L RELEASE ME	ASURES ***	**
Ganaral						
General	intormatio	in Section &	B.	al protective e	terbinent as	indicatou
Spills/Le Wea	ar a self co	ontained br	eathing ap	paratus and ap	propriate Pe	rsonal
prot	ection. (Se	ee Exposure	e Controls,	paratus and ap Personal Prote then place into sources of igni	ction sectio a suitable	n).
con	tainer for a	disposal. R	emove all s	sources of igni	tion. Absorb	spill
Vern	niculite.	orbent, non-	-compustin	le material suc	in as earin,	sand, or
	**** 5	SECTION 7	- HANDLIN	G and STORAG	E ****	
Handling	a:					
Was	sh thoroug	hly after ha	andling. Re	move contamin	ated clothin	ng and
CON	tainers wh	en transfer	ring mater	ial. Use spark-	proof tools	and
exp	tainers ret	of equipme	t residue.	iontact with sk	apor), and c	an be
dan	gerous. Av	oid ingesti	ion and inh	alation. Do not	ingest or i	nhale.
emp	oty contain	ers to heat	t, sparks of	move contaminate ventilation ial. Use spark- contact with sk liquid and/or v alation. Do no' solder, drill, g r open flames.	ring, or exp	050
con	tainer. Sto	re in a coo	Flammabl	. Store in a tig -ventilated are les-area.	a away from	n
			SURE CON	TROLS, PERSON	AL PROTEC	
Enginee	ring Contro adequate	ols:	local exha	ust ventilation	to keep air	borne
con	centrations	s below the	e permissib	le exposure lir	nits.	
		Expos	sure Limits			
Chemice	I Name	AC	GIH		OSHA -	Final PELs
UTYL BR		none list	ted	none listed	none lis	ted
						\$
OSHA V BUT	acated PEI TYL BROMI No OSHA V	Ls: IDE: Vacated PEL	s are listed	d for this chem		
N	O OSHA V	Ls: IDE: /acated PEL e Equipmen				
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DATE: 03/30/98 INDEX: N/A	P) ACCT: 742982001 CAT NO: AC106772500 PO NBR: N/A	AGE: 3
Hazardous Decomposition Pr Carbon monoxide, carbo Hazardous Polymerization: H	n dioxide, hydrogen bromide.	
	TOXICOLOGICAL INFORMATION ****	
RTECS#:		
CAS# 109-65-9: EJ6225 LD50/LC50:	000	
Not available. Carcinogenicity: BUTYL BROMIDE - Not listed by ACGIH, IAP		
Not listed by ACGIH, IAF Epidemiology:	RC, NIOSH, NTP, or OSHA.	
No information available Teratogenicity:	9.	
No information available Reproductive Effects:		
No information available Neurotoxicity:		
No information available Mutagenicity:		
No information available Other Studies:		
None. **** SECTION 12	- ECOLOGICAL INFORMATION ****	
Ecotoxicity:		
No information available Environmental Fate:	8.	
No information reported Physical/Chemical:		
No information available Other:	J.	
None.	- DISPOSAL CONSIDERATIONS ****	
None listed. RCRA D-Series Chronic Toxicity	nt with federal, state, and local regulations. ntration of Contaminants: Reference Levels: None	
listed. RCRA F-Series: None listed. RCRA P-Series: None listed.		
RCRA U-Series: None listed. Not listed as a material banned according to RCRA.	from land disposal	
**** SECTION 14	- TRANSPORT INFORMATION ****	
US DOT	A BROMIDE	
Shipping Name: N-BUTY Hazard Class: 3 UN Number: UN1126 Packing Group: II		
IMO Shipping Name: N-BUTY Hazard Class: 3.2	L BROMIDE	
UN Number: 1126 Packing Group: II		
IATA Shipping Name: 1-BRON	OBUTANE	
Hazard Class: 3 UN Number: 1126		
Packing Group: II RID/ADR	1001/741/5	
Shipping Name: 1-BROM Dangerous Goods Code: 3(3B) UN Number: 1126 Canadian TDG	NOBUTANE	
No information available		
	5 - REGULATORY INFORMATION ****	
US FEDERAL TSCA	the the TOOA lower term	
Health 8. Safaty Departing	d on the TSCA inventory.	
Chemical Test Rules	are on the Health & Safety Reporting List. In this product are under a Chemical Test Rule.	
Section 12b	are listed under TSCA Section 12b.	
TSCA Significant New Use	in this material have a SNUR under TSCA.	
SARA Section 302 (RQ)		
	2	

PAGE: 4 DATE: 03/30/98 ACCT : 742982001 INDEX: N/A CAT NO: AC106772500 PO NBR: N/A None of the chemicals in this material have an RQ. Section 302 (TPQ) None of the chemicals in this product have a TPQ. SARA Codes CAS # 109-65-9: acute, flammable. Section 313 No chemicals are reportable under Section 313. Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors. Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollut None of the ctwars in this product are listed as Toxic Pollutants under the CWA. OSHA: None of the chemicals in this product are considered highly hazardous by OSHA. STATE STATE BUTYL BROMIDE can be found on the following state right to know lists: New Jersey, Florida, Pennsylvania, Massachusetts. California No Significant Risk Level: None of the chemicals in this product are listed. European/International Regulations European Labeling in Accordance with EC Directives Hazard Symbols: XI Risk Phrases: B 10 Elammable R 10 Flammable. R 37 Irritating to respiratory system. Safety Phrases: S 16, Keep away from sources of ignition - No smoking. S 23 Do not inhale gas/fumes/vapour/spray. WGK (Water Danger/Protection) CAS# 109-65-9: 2 Canada CAS# 109-65-9 is listed on Canada's DSL/NDSL List. WHMIS: Not available. CAS# 109-65-9 is not listed on Canada's Ingredient Disclosure List. Exposure Limits CAS# 109-65-9:. OEL-RUSSIA:STEL 0.3 mg/m3;Skin **** SECTION 16 - ADDITIONAL INFORMATION **** MSDS Creation Date: 2/01/1996 Revision #1 Date: 9/02/1997 The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.