



Material Safety Data Sheet

1. Product and company identification

Product code : 532700
Product name : Green Diamond AR Alc
Material uses : Printing.
Manufacturer/ Distributor : Sun Chemical Corporation
 631 Central Avenue
 Carlstadt, NJ 07072
In case of emergency : (800) 424-9300 (U.S.)
 (703) 527-3887 (International)
Regulatory information : Canada: (905) 796-2222
 US: (201) 933-4500
Other information : (513) 830-8500
Date of revision : 8/30/2010.

2. Hazards identification

Physical state : Liquid.
Color : Clear.
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview : WARNING!
 CAUSES EYE IRRITATION.
 MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED.
 CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING
 ORGANS: BLOOD, KIDNEYS, LIVER, LYMPHATIC SYSTEM, RESPIRATORY TRACT,
 SKIN, EYES, CENTRAL NERVOUS SYSTEM.
 COMBUSTIBLE LIQUID AND VAPOR.
 VAPOR MAY CAUSE FIRE.
Routes of entry : Dermal contact. Inhalation.
Potential acute health effects
Eyes : Irritating to eyes.
Skin : Harmful in contact with skin.
Inhalation : No known significant effects or critical hazards.
Ingestion : Harmful if swallowed.
Potential chronic health effects
Carcinogenic effects : No known significant effects or critical hazards.
Mutagenic effects : No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.
See toxicological information (section 11)

2. Hazards identification

3. Composition/information on ingredients

<u>Hazardous ingredients</u>	<u>CAS number</u>	<u>%</u>
2-Butoxyethanol	111-76-2	> 70
Ethylene Glycol	107-21-1	10 - 25

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. Fire-fighting measures

- Flammability of the product** : Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Products of combustion** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Extinguishing media**
- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Flammability (OSHA criteria)** : IIIA
- Flash point** : Closed cup: 63°C (145.4°F)

6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Product name

2-Butoxyethanol

Exposure limits

ACGIH TLV (United States, 1/2009).

TWA: 20 ppm 8 hour(s).

Ethylene Glycol

ACGIH TLV (United States, 1/2009).

C: 100 mg/m³ Form: Aerosol

Consult local authorities for acceptable exposure limits.

- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Personal protection

8 . Exposure controls/personal protection

- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Color** : Clear.
- Boiling/condensation point** : Lowest known value: 168°C (335°F)
- Melting/freezing point** : May start to solidify at the following temperature: -13°C (8.6°F) This is based on data for the following ingredient: Ethylene Glycol. Weighted average: -60.6°C (-77.1°F)
- Flash point** : Closed cup: 63°C (145.4°F)
- VOC** : 99.9%
- Auto-ignition temperature** : Lowest known value: 244°C (471.2°F) (2-butoxyethanol).
- Vapor pressure** : 0.035 kPa (0.26 mm Hg)
- Density** : 0.948 g/cm³ (7.912 lbs/gal)
- Vapor density** : Highest known value: 4.07 (Air = 1) (2-butoxyethanol). Weighted average: 3.63 (Air = 1)
- Evaporation rate** : Highest known value: 0.072 (2-butoxyethanol) Weighted average: 0.06 compared with butyl acetate
- Critical temperature** : Lowest known value: 367.9°C (694.2°F) (2-butoxyethanol).

10 . Stability and reactivity

- Stability and reactivity** : The product is stable.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.
- Reactivity - Light** : Not applicable.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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11 . Toxicological information

2-butoxyethanol	LD50	Rat	220 mg/kg	-
	Intraperitoneal			
	LD50 Oral	Rat	917 mg/kg	-
	LD50 Unreported	Rat	917 mg/kg	-
	LDLo Oral	Rat	1500 mg/kg	-
	TDLo Unreported	Rat	250 mg/kg	-
	TDLo Oral	Rat	500 mg/kg	-
	LC50 Inhalation	Rat	2900 mg/m ³	7 hours
	Vapor			
	LC50 Inhalation	Rat	450 ppm	4 hours
Ethylene Glycol	Gas.			
	LD50 Dermal	Rabbit	9530 uL/kg	-
	LD50	Rat	5010 mg/kg	-
	Intraperitoneal			
	LD50 Intravenous	Rat	3260 mg/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
	LD50	Rat	2800 mg/kg	-
	Subcutaneous			
	LD50 Unreported	Rat	13 g/kg	-
	LDLo	Rat	3300 mg/kg	-
	Intramuscular			
	LDLo Intravenous	Rat	2800 mg/kg	-
	TDLo Oral	Rat	1000 mg/kg	-
	TDLo Oral	Rat	5000 mg/kg	-
	TDLo	Rat	3000 mg/kg	-
Subcutaneous				
TDLo Oral	Rat	120 mg/kg	-	
TDLo Oral	Rat	1110 mg/kg	-	

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
2-butoxyethanol	A3	3	-	-	-	-
Ethylene Glycol	A4	-	-	-	-	-

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	NA1993	Combustible Liquid, N.O.S., (Contains Ethylene Glycol Monobutyl Ether)	Combustible liquid.	III		-

PG* : Packing group

15 . Regulatory information

HCS Classification : Combustible liquid
Irritating material
Target organ effects

TSCA 8(b) inventory : Listed

U.S. Federal regulations : TSCA 4(a) dioxins/furanes testing: No products were found.
TSCA 4(a) final testing order: No products were found.
TSCA 4(a) final test rules: No products were found.
TSCA 4(a) ITC priority list: No products were found.
TSCA 4(a) proposed test rules: No products were found.
TSCA 5(a)2 final significant rules: NJTSRN-2350-2
TSCA 5(a)2 proposed significant rules: NJTSRN-2350-2
TSCA 5(e) substance consent order: No products were found.
TSCA 6 final risk management: No products were found.
TSCA 6 proposed risk management: No products were found.
TSCA 8(a) CAIR: No products were found.
TSCA 8(a) chemical risk rules: No products were found.
TSCA 8(a) dioxin/furan precursor: No products were found.
TSCA 8(a) IUR: No products were found.
TSCA 8(a) PAIR: No products were found.
TSCA 8(c) calls for record of SAR: No products were found.
TSCA 8(d) H and S data reporting: No products were found.
TSCA 12(b) annual export notification: No products were found.
TSCA 12(b) one-time export: No products were found.
TSCA precursor chemical list: No products were found.
TSCA commerce control list: No products were found.

15 . Regulatory information

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Ethylene Glycol; 2-butoxyethanol

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Ethylene Glycol: Immediate (acute) health hazard, Delayed (chronic) health hazard; 2-butoxyethanol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Form R - Reporting requirements	: Glycol Ethers	111-76-2	77.023
	Ethylene Glycol	107-21-1	22.976

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

CONEG : In compliance.

International lists

International lists :

- Canada inventory:** All components are listed or exempted.
- Europe inventory:** All components are listed or exempted.
- Australia inventory (AICS):** All components are listed or exempted.
- China inventory (IECSC):** All components are listed or exempted.
- Japan inventory:** All components are listed or exempted.
- Korea inventory:** All components are listed or exempted.
- New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
- Philippines inventory (PICCS):** All components are listed or exempted.

16 . Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOR. CAUSES EYE IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Fire hazard		2
Reactivity		0

Personal protection

Version : 3.07

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

16 . Other information