



Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table border="1" style="margin: auto;"> <tr> <td style="background-color: #00FFFF;">Health Hazard</td> <td style="text-align: center; border: 1px solid black;">1</td> </tr> <tr> <td style="background-color: #FFC0CB;">Fire Hazard</td> <td style="text-align: center; border: 1px solid black;">1</td> </tr> <tr> <td style="background-color: #FFFF00;">Reactivity</td> <td style="text-align: center; border: 1px solid black;">0</td> </tr> </table>	Health Hazard	1	Fire Hazard	1	Reactivity	0	
Health Hazard	1							
Fire Hazard	1							
Reactivity	0							
		See Section 15.						

Section 1. Chemical Product and Company Identification		Page Number: 1
Common Name/Trade Name	Undecyl Alcohol	
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	Catalog Number(s). U2028 CAS# 112-42-5 RTECS YQ3155000 TSCA TSCA 8(b) inventory: Undecyl Alcohol CI# Not available.
Commercial Name(s)	Not available.	<u>IN CASE OF EMERGENCY</u> <u>CHEMTREC (24hr) 800-424-9300</u> CALL (310) 516-8000
Synonym	1-Undecanol; 1-Hendecanol; Alcohol C-11; Hendecanoic alcohol; Hendecyl alcohol; n-Hendecylenic alcohol; n-Undecanol; n-Undecyl alcohol	
Chemical Name	Undecyl Alcohol	
Chemical Family	Not available.	
Chemical Formula	C ₁₁ H ₂₄ O	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
Name	CAS #	Exposure Limits			% by Weight
		TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	
1) Undecyl Alcohol	112-42-5				100
Toxicological Data on Ingredients					
	Undecyl Alcohol: ORAL (LD50): Acute: 3000 mg/kg [Rat]. DERMAL (LD50): Acute: 3900 mg/kg [Rabbit]. 16600 mg/kg [Guinea pig].				

Section 3. Hazards Identification	
Potential Acute Health Effects	Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	Wash with soap and water. Get medical attention if irritation develops.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Combustible.
Auto-Ignition Temperature	Not available.
Flash Points	CLOSED CUP: >82°C (179.6°F). OPEN CUP: >112°C (233 .6°F).
Flammable Limits	Not available.
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Not available.

Section 6. Accidental Release Measures

Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill	Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.
Storage	Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the workstation location.
Personal Protection	Safety glasses. Synthetic apron. Gloves (impervious). Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	Odor	Floral. Citrus
Molecular Weight	172.31 g/mole	Taste	Not available.
pH (1% soln/water)	Not applicable.	Color	Colorless.
Boiling Point	243°C (469.4°F)		
Melting Point	11°C (51.8°F) - 19 C.		
Critical Temperature	Not available.		
Specific Gravity	0.8298 (Water = 1)		
Vapor Pressure	<0.1 kPa (@ 20°C)		
Vapor Density	5.9 (Air = 1)		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	The product is more soluble in oil; log(oil/water) = 4.7		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water, diethyl ether.		
Solubility	Easily soluble in diethyl ether. Insoluble in cold water, hot water. Soluble in most organic solvents. Soluble in Ethanol.		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Excess heat, incompatible materials
Incompatibility with various substances	Reactive with oxidizing agents, acids.
Corrosivity	Not available.
Special Remarks on Reactivity	Not available.
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact.
Toxicity to Animals	Acute oral toxicity (LD50): 3000 mg/kg [Rat]. Acute dermal toxicity (LD50): 3900 mg/kg [Rabbit].
Chronic Effects on Humans	Not available.
Other Toxic Effects on Humans	Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.
Special Remarks on Toxicity to Animals	Lethal Dose/Conc 50% Kill: LD50[Rabbit] - Route: Skin; Dose: 4760 uL/kg LD50[Guinea Pig] - Route: Skin; Dose: >20 mL/kg
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic)
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects Skin: May cause slight to moderate skin irritation. It may be absorbed through the skin. Eyes: May cause eye irritation. Inhalation: This product has a very low vapor pressure and is not considered hazardous for normal handling. If the product is heated or misted, the inhalation of the mist or vapor may cause respiratory tract irritation. Ingestion: Low hazard. It may cause digestive/gastrointestinal tract irritation.

Section 12. Ecological Information

Ecotoxicity	Ecotoxicity in water (LC50): 1.04 mg/L 96 hours [Fish (Pimephales promelas (fathead minnow))].
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation	1. TERRESTRIAL FATE: Based on a recommended classification scheme(1), an estimated Koc value of 8800(SRC), determined from an experimental log Kow(2) and a recommended regression-derived equation(3), indicates that 1-undecanol will have no mobility in soil(SRC). 1-Undecanol is expected to biodegrade rapidly in soil based on sewage and sludge studies(4-6). [Peer Reviewed] [(1) Swann RL et al; Res Rev 85: 23 (1983) (2) Abraham MH et al; J Pharm Sci 83: 1085-100 (1994) (3) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington DC: Amer Chem Soc pp. 4-9 (1990) (4) Babeu L, Vaishnav DD; J Indust Microb 2: 107-15 (1987) (5) Vaishnav DD et al; Chemosphere 16: 695-703 (1987) (6) Yonezawa Y et al; Kogai Shigen Kenkyusho Iho 11: 77-82 (1981)] 2. AQUATIC FATE: Based on a recommended classification scheme(1), an estimated Koc value of 8800(SRC),

Continued on Next Page

determined from an experimental log Kow(2) and a recommended regression-derived equation(3), indicates that 1-undecanol should adsorb to suspended solids and sediment(SRC) in the water. 1-Undecanol may volatilize from water surfaces based on an estimated Henry's Law constant of 7.3×10^{-5} atm-cu m/mole(SRC), developed using a fragment constant estimation method(4). Estimated half-lives for a model river and model lake are 20 hours and 10 days, respectively(3, SRC). From a model pond, the volatilization half-lives can be estimated to be about 9 days if the effect of adsorption to sediment is ignored and 9 months when the effect of maximum adsorption is considered(9, SRC). An estimated BCF value of 2280(3, SRC), from an experimental log Kow(2), suggests that 1-undecanol will bioconcentrate in aquatic organisms(SRC) according to a recommended classification scheme(5). 1-Undecanol is expected to biodegrade rapidly in water based on sewage and sludge studies(6-8). [Peer Reviewed] [(1) Swann RL et al; Res Rev 85: 23 (1983) (2) Abraham MH et al; J Pharm Sci 83: 1085-100 (1994) (3) Lyman WJ et al; Handbook of Chemical Property Estimation Methods Washington DC: Amer Chem Soc pp. 4-9, 5-4, 5-10, 15-1 to 15-29 (1990) (4) Meylan WM, Howard PH; Environ Toxicol Chem 10: 1283-93 (1991) (5) Franke C et al; Chemosphere 29: 1501-14 (1994) (6) Babeu L, Vaishnav DD; J Indust Microb 2: 107-15 (1987) (7) Vaishnav DD et al; Chemosphere 16: 695-703 (1987) (8) Yonezawa Y et al; Kogai Shigen Kenkyusho Iho 11: 77-82 (1981) (9) USEPA; EXAMS II Computer Simulation (1987)]

3. ATMOSPHERIC FATE: According to a suggested classification scheme(1), an experimental vapor pressure of 2.97×10^{-3} mm Hg at 25 deg C(2) indicates that 1-undecanol will exist in the vapor phase in the ambient atmosphere. Vapor-phase 1-undecanol is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals(3, SRC); the half-life for this reaction in air is estimated to be about 23 hours(4, SRC). [Peer Reviewed] [(1) Bidleman TF; Environ Sci Technol 22: 361-367 (1988) (2) Daubert TE, Danner RP; Physical and Thermodynamic Properties of Pure Chemicals Data Compilation Washington, D.C.: Taylor and Francis (1989) (3) Atkinson R; Chem Rev 85: 69-201 (1985) (4) Meylan WM, Howard PH; Chemosphere 26: 2293-99 (1993)]

BIODEGRADATION:

Using acclimated mixed microbial cultures, the theoretical and 5-day BOD for 1-undecanol were determined to be 16.50 and 4.5, respectively(1). After 5 days at 21 deg C in sewage, the theoretical BOD for 1-undecanol was 27.6%(2). 1-Undecanol had a zero order biodegradation rate of 2.08×10^{-2} ppm/hour and a first order biodegradation rate constant of 1.43×10^{-2} per hour by activated sludge(3). [Peer Reviewed] [(1) Babeu L, Vaishnav DD; J Indust Microb 2: 107-15 (1987) (2) Vaishnav DD et al; Chemosphere 16: 695-703 (1987) (3) Yonezawa Y et al; Kogai Shigen Kenkyusho Iho 11: 77-82 (1981)]

Section 13. Disposal Considerations

Waste Disposal

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification

Not a DOT controlled material (United States).

Identification

Not applicable.

Special Provisions for Transport

Not applicable.

DOT (Pictograms)



Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

TSCA 8(b) inventory: Undecyl Alcohol

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
 EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 203-970-5).
 Canada: Listed on Canadian Domestic Substance List (DSL).
 China: Listed on National Inventory.
 Japan: Listed on National Inventory (ENCS).
 Korea: Listed on National Inventory (KECI).
 Philippines: Listed on National Inventory (PICCS).
 Australia: Listed on AICS.

Other Classifications

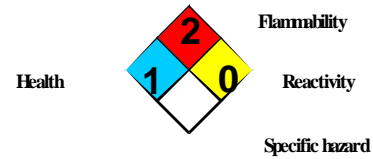
WHMIS (Canada) CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC) R38- Irritating to skin. S37- Wear suitable gloves

HMS (U.S.A.)

Health Hazard	1
Fire Hazard	1
Reactivity	0
Personal Protection	C

National Fire Protection Association (U.S.A.)



WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)



ADR (Europe) (Pictograms)



Protective Equipment



Gloves (impervious).



Synthetic apron.

Wear appropriate respirator when ventilation is inadequate.

Safety glasses.



Section 16. Other Information**MSDS Code** U2023**References** Not available.**Other Special Considerations** Major Uses: Food Additive-Synthetic flavor; perfumery

Validated by Sonia Owen on 5/15/2009.

Verified by Sonia Owen.
Printed 5/15/2009.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.