

C&D TECHNOLOGIES, INC.

MATERIAL SAFETY DATA SHEET – L83

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION	
PRODUCT IDENTITY: "Battery, wet, filled with acid, electric storage - UN2794" Gelled Electrolyte Battery (GEL) –Electrical Storage -Valve Regulated Lead-Acid (VRLA)	
Date issued: Sept. 28, 1986 Date revised: December 1, 2002	
Manufacturer Name: C&D Technologies, Inc.	
Address: Dynasty Division 900 East Keefe Avenue Milwaukee, WI 53212	Telephone numbers: Day time: 414-967-6500 Toll Free: 800-365-7777
Web site: www.dynastybattery.com	
North America 24 Hour Emergency Telephone: (CHEM TEL) 1-800-255-3924	
International 24 Hour Emergency Telephone: (CHEM TEL) 1-813-248-0585	

SECTION II: COMPOSITION / INFORMATION ON INGREDIENTS				
HAZARDOUS OSHA COMPONENT	CAS#	OSHA PEL	ACGIH TLV	% BY WEIGHT
* Sulfuric Acid / Battery Electrolyte 1.300 sg 40 wt %	7664-93-9	1mg/m ³	1mg/m ³ STEL	22
Amorphous Silica	7631-86-9	5mg/m ³	10mg/m ³	20-30 % of acid wt
*Lead/Grid	7439-92-1	50 ug/m ³	150 ug/m ³	50
*Lead Oxide/Dioxide	1309-60-0	50 ug/m ³	150ug/m ³	21
*Lead Sulfate/ Anglesite	7446-14-2	50ug/m ³	150ug/m ³	<1
Section 313 (40 CFR 372) Listed Toxic Chemicals are Preceded by an*				

SECTION III: HAZARDOUS IDENTIFICATION	
<p>Appearance and Odor: Gelled electrolyte is a clear to cloudy liquid. Lead is metallic gray in color. Formed lead dioxide is a dark brown in color with a slight acidic odor.</p> <p>Routes of entry:</p> <p>Sulfuric Acid: Inhalation, skin, ingestion.</p> <p>Lead: Inhalation and Ingestion. Ingestion of lead occurs by hand to mouth contamination. After handling lead or its compounds, hands must be washed prior to eating or drinking. Metallic lead cannot be absorbed through the skin.</p>	<p>Health Hazards (Acute & Chronic)</p> <p>Acute: Sulfuric acid exposure may cause irritation of the skin, corneal damage of the eyes, irritation of the mucous membranes and upper respiratory system, including the lungs. Acute lead exposure may cause GI upset, loss of appetite, diarrhea, constipation, fatigue, joint pain, and difficulty sleeping.</p> <p>Chronic: Exposure to lead may cause anemia, kidney damage and damage to the central nervous and reproductive systems. Lead exposure may also affect developing fetuses in pregnant women. Chronic exposure to sulfuric acid may cause scarring of skin and mucous membranes, bronchitis, contact dermatitis, and erosion of tooth enamel.</p>

SECTION III (Continued)	
HMIS label rating for sulfuric acid: 3 0 2 X X = acid Hazardous Material Information System	
NFPA label rating for sulfuric acid: 2 0 1 X X = acid National Fire Protection Agency	Rating Codes: 0= Insignificant, 1= Slight, 2= Moderate, 3= High, 4= Extreme
HMIS and NFPA Hazard labels are used to identify the battery(s) dilute 1.300sg sulfuric acid. The first number represents the Health hazard, second number represents Fire hazard, and the third number represents the Reactivity hazard. The fourth space identifies the hazardous material, which is acid and/or typical recommended personal protective equipment, i.e., safety glasses, rubber or neoprene gloves etc.	
California Proposition 65 Warning – <i>Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.</i>	

SECTION IV: FIRST AID PROCEDURES – Sulfuric Acid	
<u>Skin/Eyes</u>	<u>Ingestion/Inhalation</u>
<ul style="list-style-type: none"> - Flush the affected area with water for 15 minutes - Remove contaminated clothing - If irritation continues, seek medical attention 	<ul style="list-style-type: none"> - Do not induce vomiting - Drink 8 oz. of water or milk - If difficulty in breathing occurs, remove to fresh air, give CPR if necessary - Seek medical attention immediately

SECTION V: FIREFIGHTING MEASURES
FIRE AND EXPLOSIVE PROPERTIES: Hydrogen Flash point: -259°C Hydrogen Autoignition point: 580°C Hydrogen Flammable Limits in Air (% by Volume): LEL: 4.1 UEL: 74.2 Lower Explosion Limit (LEL), Upper Explosion Limit (UEL)
Unusual Fire and Explosion Hazards: Hydrogen and Oxygen gases are produced in cells during normal battery operation. Ventilate Area.
Extinguishing Media: Dry Chemical, Foam or CO ₂
Special Firefighter Procedures: Use Positive Pressure, self-contained breathing apparatus.

SECTION VI: ACCIDENTAL RELEASE MEASURES
STEPS TO BE TAKEN IF BATTERY IS BROKEN: Neutralize exposed battery parts with soda ash or sodium bicarbonate until fizzing stops, pH should be at neutral 6-8. Provide adequate ventilation. Heat, carbon dioxide and hydrogen gas may be given off during neutralization. Collect residue in a suitable container. Place the broken battery in a heavy-duty plastic bag or other non-metallic container. Properly recycle all battery residue and parts.

SECTION VII: HANDLING AND STORAGE
Store in a cool; dry area away from combustibles. Do not store in sealed, unventilated areas. Avoid overheating and overcharging. Do not use organic solvents or other than

manufactures recommended cleaners on the batteries.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: General room ventilation is sufficient during normal use and handling. Do not install these batteries in a sealed, unventilated area.

PERSONAL PROTECTIVE EQUIPMENT (DURING INSTALLATION OR IN THE EVENT OF BATTERY BREAKAGE)

Eye Protection = Chemical goggles, safety glasses with sideshields and or a full-face shield.

Protective gloves = Rubber or neoprene

Respiratory Protection = NIOSH approved acid mist/organic vapor respirator, if OSHA PEL is exceeded.

Other Protective Equipment = Acid resistant apron or clothes.

WORK PRACTICES: Use standard lead-acid battery practices. Do not wear metallic jewelry when working with batteries. Use non-conductive tools only. Discharge static electricity prior to working on a battery. Maintain eyewash, fire extinguisher and emergency communication device in the work area.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

ACID : Boiling Point: 110°C to 112°C	Vapor Pressure: 13.8 mm Hg @ 25°C
Vapor Density: (Air=1) 3.4	Melting point: N/A
Solubility in water: N/A	
Specific Gravity 1.300 +/- 0.030	
Appearance/Odor: clear to cloudy with slightly acidic odor	

SECTION X: STABILITY AND REACTIVITY

STABILITY: This battery and contents are stable.

Conditions to avoid: Overheating, overcharging which results in acid mist/Hydrogen generation.

Incompatibility (materials to avoid): Strong alkaline materials, conductive metals, organic solvents, sparks or open flame.

Hazardous Byproducts: Hydrogen gas may be generated in an overcharged condition, in fire or at very high temperatures. In fire, may emit CO, CO₂ and Sulfur Oxides.

Hazardous polymerization will not occur

SECTION XI: TOXICOLOGICAL INFORMATION – SULFURIC ACID			
The Dynasty VRLA batteries are a sealed, recombinant design that require no water replacement throughout their service life, thus no contact is made with the battery's internal components or chemical hazards. Under normal use and handling, these batteries do not emit regulated or hazardous substances.			
	Administration Route	Dose	Test Animal
LD 50	Oral	2140 mg/kg	Rat
LDLo	Unreported	135 mg/kg	Man
LC50	Inhalation	510mg/m3	Rat
Carcinogenicity: The International Agency on Cancer (IARCC) has classified "strong inorganic acid mists containing sulfuric acid" as a category 1 carcinogen (inhalation), a substance that is carcinogenic to humans. This classification does not apply to the liquid forms of sulfuric acid contained within the battery. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist at high levels.			

SECTION XII: ECOLOGICAL INFORMATION
Lead and its compounds can pose a threat if released into the environment.

SECTION XIII: DISPOSAL CONSIDERATIONS
Waste Disposal Method: Send to lead smelter for reclamation following applicable Federal, State and Local regulations. Product can be recycled along with automotive (SLI) lead-acid batteries.

SECTION XIV: TRANSPORTATION AND INTERNATIONAL REGULATIONS
UN2794 and Corrosive 8 "Diamond" identification placards are required when transporting over 1000 pounds of Dynasty GEL batteries. Dynasty GEL batteries must be boxed in adequate boxes identified as below with their terminals protected against short-circuiting.
DOT: Battery, wet, filled with acid, electric storage - UN2794 Hazard Class: 8 Packing Group: III Label: Corrosive
IATA: Battery, wet, filled with acid, electric storage - UN2794 Hazard Class: 8 Packing Instructions 800 - Group II Label: Corrosive
IMO: Battery, wet, filled with acid, electric storage - UN2794 Hazard Class: 8 Packing Group: III Label: Corrosive

SECTION XV: REGULATORY INFORMATION
See 29 CFR 1910.268(b)(2)

SECTION XVI: OTHER INFORMATION
The information herein is given in good faith, but no warranty, expressed or implied, is made.

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