Clore
Automotive

MATERIAL SAFETY DATA SHEET
PRODUCT NAME: JNC4000/JNC660 - Sealed Lead Acid Battery
DATE: 02/22/10
ISSUED BY: Engineering

EMERGENCY TELEPHONE NUMBERS:
US: CHEMTREC 1-800-424-9300
CAN: CHEMTREC 1-800-424-9300
OUTSIDE US: +1-202-483-7616
NON-EMERGENCY: 913-310-1050

HAZARDOUS COMPONENTS

COMPONENTS	%WEIGHT	TLV	LD50 ORAL	LC50 INHALATION	LC50 CONTACT
Lead (Pb, Pb02, PbSo)	About 70%	N/A	(500) Mg/Kg	N/A	N/A
Sulfuric Acid	About 20%	1 mg/m3	(2.140) Mg/Kg	N/A	N/A
Fiberglass Separator	About 5%	N/A	N/A	N/A	N/A
Styron R 478 (Polystyrene)	About 5%	N/A	N/A	N/A	N/A

PHYSICAL DATA

COMPONENTS	DENSITY	MELTING POINT	SOLLUBILITY (H2O)	ODOR	APPEARANCE
Lead	11.34	327.4°C (Boiling)	None	None	Silver-Gray Metal
Lead Sulfate	6.2	1070°C (Boiling)	40mg/l (15°C)	None	White Powder
Lead Dioxide	9.4	290° (Boiling)	None	None	Brown Powder
Sulfuric Acid	About 1.3	About 114°C (Boiling)	100%	Acidic	Clear Colorless Liquid
Fiberglass Sep.	N/A	N/A	Slight	Toxic	White Fibrous Glass
478 Polystyrene	N/A	N/A	None	None	Solid

FLAMMABILITY DATA

COMPONENTS	FLASHPOINT	EXPLOSIVE LIMITS	COMMENTS
Lead	None	None	-
Sulfuric Acid	None	None	-
Hydrogen	N/A	4%-74.2%	Sealed batteries can emit hydrogen only when overcharged. (Floal voltage> 2.4 VPC)
Fiberglass Sep.	None	N/A	Toxic vapors may be released. In case of fire: wear self-contained breathing apparatus.
478 Polystyrene	None	N/A	Temperatures over 300°C (572°F) may release combustible gases. In case of fire: wear positive pressure self-contained breathing apparatus.

FIRST AID

SULFURIC ACID PRECAUTIONS

SKIN CONTACT: Flush with water; see physician if contact area is large or if blisters form.

EYE CONTACT: Call physician immediately and flush with water until physician arrives.

INGESTION: Call physician. If patient is conscious, flush mouth with water, have patient drink milk or sodium bicarbonate solution.

DO NOT GIVE ANYTHING TO AN UNCONSCIOUS PERSON.

REACTIVITY DATA

COMPONENT	Sulfuric Acid
STABILITY	Stable at all temperatures
POLYMERIZATION	Will not polymerize
INCOMPATIBILITY	Reactive metals, strong bases, most organic compounds
DECOMPOSITION PRODUCTS	Sulfuric dioxide, trioxide, hydrogen sulfide, hydrogen
CONDITIONS TO AVOID	Prohibit smoking, sparks, etc. from charging area. Avoid mixing acid with other chemicals.

SPILL OR LEAK PROCEDURE

STEPS TO TAKE IN CASE OF LEAKS OR SPILLS: If sulfuric acid is spilled from a battery, neutralize the acid with sodium bicarbonate (baking soda), sodium carbon (soda ash), or calcium oxide (lime). Flush the area with water discard to the sewage systems. Do not allow unneutralized acid into the sewage system.

WASTE DISPOSAL METHOD: Neutralized acid may be flushed down the sewer. Spent batteries must be treated as hazardous waste and disposed of according to local state and federal regulations. A copy of this material safety data must be supplied to any scrap dealer or secondary smelter with battery.

PROTECTION

EXPOSURE	**PROTECTION**	**COMMENTS**
Skin	Rubber gloves, Apron	Protective equipment must be worn if battery is cracked or otherwise damaged.
Respiratory	Respirator (for lead)	A respirator should be worn during reclaim operations if the TLV exceeded.
Eyes	Safety goggles, Face shield	-

ELECTRICAL SAFETY

Due to the battery's low internal resistance and high power density, high levels of short circuit can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instruction and diagrams when installing or maintaining battery systems.

HEALTH HAZARD DATA

LEAD: The toxic effects of lead are accumulative and slow to appear. It affects the kidneys, reproductive, and central nervous system. The symptoms of lead overexposure are anemia, vomiting, headache, stomach pain (lead colic), dizziness, loss of appetite, and muscle and joint pain. Exposure to lead from a battery most often occurs during lead reclaim operations through the breathing or ingestion of lead dusts and fumes. THIS DATA MUST BE PASSED TO ANY SCRAP OR SMELTER WHEN A BATTERY IS RESOLD.

SULFURIC ACID: Sulfuric acid is a strong corrosive. Contact with acid can cause severe burns on the skin and in the eyes. Ingestion of sulfuric acid will cause GI tract burns. Acid can be release if the battery case is damaged or if the vents are tampered with.

FIBERGLASS SEPARATOR: Fibrous glass is an irritant of the upper respiratory tract, skin and eyes. For exposure up to 10F/CC use MSA Comfoll with type H filter. Above 10F/CC up to 50F/CC use Ultra-Twin with type H filter. This product is not considered carcinogenic by NTP or OSHA.

I.A.T.A. UN2800 CLASSIFICATION

We hereby certify that all ES Series and Clore Proformer Rechargeable Lead-acid Batteries conform to the UN2800 classification as "Batteries, Wet, Non-Spillable, and Electric Storage" as a result of passing the Vibration and Pressure Differential Test described in D.O.T., 49 CFR 173.159(d), and IMO/IMDG, and ICAO/IATA packing instruction 806 and note A67.

ES Series and Clore Proformer Batteries, having met the related conditions, are EXEMPT from hazardous goods regulations for the purpose of transportation by DOT, and IATA/ICAO, and therefore are unrestricted for transportation by any means. For all modes of transportation, each battery outer package is labeled "NON-SPILLABLE." All our batteries are marked non-spillable.