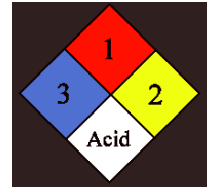


TELEDYNE BATTERY PRODUCTS MATERIAL SAFETY DATA SHEET
LEAD -ACID NONSPILLABLE BATTERY

HAZARD RATING



TELEDYNE BATTERY PRODUCTS
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THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

VENDOR ASSUMES NO RESPONSIBILITY FOR INJURY TO VENDEE OR THIRD PERSON PROXIMATELY CAUSED BY ABNORMAL USE OF THE MATERIAL EVEN IF REASONABLE SAFETY PROCEDURES ARE FOLLOWED. FURTHERMORE, VENDEE ASSUMES THE RISK IN THIS USE OF THE MATERIAL.

CONTRACT/ORDER NO.:-----

NATIONAL STOCK NO.:-----

SPECIFICATION REFERENCE NO.:-----

DATE PREPARED: March 2006

SECTION I: PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: TELEDYNE BATTERY PRODUCTS

ADDRESS: 840 WEST BROCKTON AVENUE
REDLANDS, CA 92374

TELEPHONE: 909-793-3131

24-HOUR EMERGENCY CONTACT: INFOTRAC 1-800-535-5053

PRODUCT NAME: LEAD ACID, NONSPILLABLE BATTERY

TRADE NAME: TELEDYNE BATTERY, GILL AIRCRAFT BATTERY, CENTURION AND SILTRON

SYNONYMS: 12B90R, 690R, 691R, G-25S, G-30S, G-35S, G-243S, G-6381ES, G-639ES, G641S AND G230S

CHEMICAL FAMILY: LEAD AND LEAD COMPONENTS

FORMULA: NOT APPLICABLE

DOT DESCRIPTION: NONSPILLABLE BATTERY

INTENDED USE: VALVE REGULATED/LEAD-ACID BATTERIES FOR AIRCRAFT, EMERGENCY LIGHTING,
GROUND SUPPORT, ENGINE STARTING EQUIPMENT AND CABLE
TV/TELECOMMUNICATIONS.

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SECTION II: HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	CAS #	WEIGHT %	OSHA PEL	ACGIH TLV	OSHA ACTION LEVEL
Lead and lead compounds	7439-92-1	<95	50 µg/m ³	0.15 mg/m ³	30 µg/m ³
Sulfuric acid (Electrolyte)	7664-93-9	<22	1 mg/m ³	1 mg/m ³	Not Applicable
Antimony	7440-36-0	<0.4	0.5 mg/m ³	0.5 mg/m ³	Not Applicable
Arsenic	7440-38-2	<0.1	10 µg/m ³	0.2 mg/m ³	5 µ/m ³
Barium sulfate	7727-43-7	<0.4	5 mg/m ³ **	10 mg/m ³	Not Applicable
Calcium compounds	7440-70-2	<0.1	5 mg/m ³ *	2 mg/m ³ *	Not Applicable
Carbon black extracts	1333-86-4	<0.1	3.5 mg/m ³	3.5 mg/m ³	Not Applicable
Magnesium sulfate	7487-88-9	<0.3	Not Applicable	Not Applicable	Not Applicable
Nickel sulfate	7786-81-4	<0.1	0.1 mg/m ³	0.1 mg/m ³	Not Applicable
Sodium sulfate	7757-82-6	<0.3	10 mg/m ³ ^	10 mg/m ³ ^	Not Applicable
Selenium	7782-49-2	<0.1	0.2 mg/m ³	0.2 mg/m ³	Not Applicable
Tin compounds	7440-31-5	<0.5	2 mg/m ³	2 mg/m ³	Not Applicable

* As CaO

** Respirable

^ Total nuisance dust

SECTION III: PHYSICAL DATA

BOILING POINT: @ 760 mm HG	LEAD	3164 °F (1740 °C)	MELTING POINT:	LEAD	621 °F (327.43 °C)
	ELECTROLYTE	203 °F (95 °C)		ELECTROLYTE	N/A
SPECIFIC GRAVITY:	LEAD	11.34	VAPOR PRESSURE:	LEAD	NEGLIGIBLE
	ELECTROLYTE	1.285		ELECTROLYTE	10 @ 18 °F
VAPOR DENSITY:	LEAD	N/A	SOLUBILITY:	LEAD	N/A
	ELECTROLYTE	>1		ELECTROLYTE	100%
% VOLATILES BY VOL.:		NEGLIGIBLE	EVAPORATION RATE:	LEAD	N/A
				ELECTROLYTE	<1

APPEARANCE AND ODOR: NO ODOR. BATTERY CASE IS PINK, WHITE, OFF-WHITE, OR BLACK. ELECTROLYTE IS A CLEAR AND ODORLESS LIQUID.

SECTION IV: HEALTH HAZARD INFORMATION

ROUTES OF EXPOSURE

INHALATION:

INHALATION OF ELECTROLYTE CAN CAUSE BURNS IN THE UPPER RESPIRATORY TRACT. LUNG IRRITATION AND PULMONARY EDEMA MAY OCCUR. LEAD DUST, VAPOR OR FUME MAY BE ABSORBED BY THE RESPIRATORY SYSTEM AND CAN RESULT IN BOTH ACUTE AND CHRONIC OVEREXPOSURE AS WELL AS RESPIRATORY IRRITATION.

SKIN CONTACT:

ELECTROLYTE MAY CAUSE BURNS OR LOCALIZED IRRITATION. LEAD IS NOT READILY ABSORBED THROUGH THE SKIN.

EYE CONTACT:

ELECTROLYTE MAY CAUSE IRRITATION, CORNEAL BURNS AND CONJUNCTIVITIS. BLINDNESS OR SEVERE OR PERMANENT INJURY MAY RESULT. LEAD DUST, VAPOR OR FUME MAY CAUSE IRRITATION.

INGESTION:

ELECTROLYTE MAY CAUSE BURNS TO THE MOUTH, ESOPHAGUS AND STOMACH. LEAD DUST, VAPOR OR FUME MAY BE ABSORBED BY THE RESPIRATORY SYSTEM AND CAN RESULT IN BOTH ACUTE AND CHRONIC OVEREXPOSURE.

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EFFECTS OF OVEREXPOSURE

ACUTE

OVEREXPOSURE:

SULFURIC ACID MAY CAUSE IRRITATION TO THE EYES, NOSE AND THROAT. DIFFICULTY IN BREATHING MAY BE EXPERIENCED. ACID SPLASHED IN THE EYES OR ON THE SKIN MAY CAUSE BURNS OR IRRITATION. ACUTE UNTREATED OVEREXPOSURE TO LEAD MAY LEAD TO WEAKNESS, VOMITING, LOSS OF APPETITE, UN-COORDINATED BODY MOVEMENTS, CONVULSIONS, STUPOR AND POSSIBLY COMA.

CHRONIC

OVEREXPOSURE:

REPEATED PROLONGED EXPOSURE TO DILUTE SULFURIC ACID MAY CAUSE IRRITATION OF THE SKIN. REPEATED OR PROLONGED EXPOSURE TO MIST OR VAPORS OF SULFURIC ACID MAY CAUSE EROSION OF THE TEETH, CHRONIC IRRITATION OF THE EYES OR CHRONIC INFLAMMATION TO THE NOSE, THROAT AND BRONCHIAL TUBES. UNDER NORMAL CONDITIONS OF USE, EXPOSURE TO LEAD OR LEAD CONTAINING COMPOUNDS DOES NOT OCCUR. CHRONIC UNTREATED EXPOSURE TO LEAD MAY CAUSE WEAKNESS, INSOMNIA, HYPERTENSION, SLIGHT IRRITATION TO SKIN AND EYES, METALLIC TASTE IN MOUTH, ANEMIA, CONSTIPATION, HEADACHE, MUSCLE AND JOINT PAINS, NEUROMUSCULAR DYSFUNCTION, POSSIBLE PARALYSIS, ENCEPHALOPATHY AND PNEUMOCONIOSIS. LEAD EXPOSURE CAN POSE RISK TO DEVELOPING FETUSES AND MAY ALSO IMPAIR THE REPRODUCTIVE SYSTEMS IN BOTH MEN AND WOMEN. DAMAGE TO THE KIDNEYS, HEMATOPOIETIC AND/OR CENTRAL NERVOUS SYSTEM MAY OCCUR.

CARCINOGENICITY

Lead
Arsenic
Sulfuric acid

IARC

X
X
X

NTP

X

OSHA

X
X

EMERGENCY AND FIRST AID PROCEDURES

EYES:

(DRY OXIDE OR ACID) WASH IMMEDIATELY WITH LARGE AMOUNTS OF WATER, LIFTING THE LOWER AND UPPER LIDS CONTINUOUSLY. GET MEDICAL ATTENTION.

SKIN:

NOT A DIRECT ROUTE OF ENTRY FOR LEAD AND LEAD COMPOUNDS. FOR ACID EXPOSURE, IMMEDIATELY FLUSH THE EXPOSED AREA OF THE SKIN WITH LARGE AMOUNTS OF WATER.

REMOVE ANY CONTAMINATED CLOTHING AND SHOES (THIS CAN BE DONE WHILE UNDER SHOWER). GET MEDICAL ATTENTION FOR ACID EXPOSURE.

INHALATION:

FOR LEAD AND LEAD COMPOUNDS EXPOSURE, REMOVE EMPLOYEE FROM AREA OF EXPOSURE AND GET MEDICAL ATTENTION. FOR ACID EXPOSURE, REMOVE EMPLOYEE TO FRESH AIR. IF PERSON IS NOT BREATHING AND HAS NO PULSE, PERFORM CPR. KEEP VICTIM WARM AND AT REST. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

INGESTION:

FOR LEAD EXPOSURE, GET MEDICAL ATTENTION. FOR SULFURIC ACID, GIVE EMPLOYEE LARGE AMOUNTS OF WATER IF CONSCIOUS. DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION. FOR LEAD, GET IMMEDIATE MEDICAL ATTENTION.

SECTION V: FIRE AND EXPLOSION DATA

FLASH POINT:

N/A FOR LEAD

675 °F FOR POLYPROPYLENE CASE

AUTO IGNITION TEMPERATURE:

N/A

FLAMMABLE LIMITS IN AIR (% BY VOL):

N/A

EXTINGUISHING MEDIA:

USE HALON, DRY CHEMICAL EXTINGUISHER. BATTERY CASE WILL BURN.

SPECIAL FIRE FIGHTING PROCEDURES:

USE OF WATER IN EXTINGUISHING BURNING BATTERIES MAY CAUSE SPATTERING DUE TO THE PRESENCE OF MOLTEN LEAD.

UNUSUAL FIRE AND EXPLOSION HAZARD:

WHILE BATTERY IS BEING CHARGED, HYDROGEN GAS IS PRODUCED.

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BATTERY MAY EXPLODE IF HYDROGEN GAS IS TRAPPED INSIDE THE
BATTERY CASE. KEEP IGNITION SOURCES AWAY.

SECTION VI: REACTIVITY DATA

**CONDITIONS CONTRIBUTING TO INSTABILITY:
INCOMPATIBILITY:** NONE
CONTACT OF ELECTROLYTE WITH ORGANIC MATERIAL. ALSO
CONTACT OF LEAD WITH STRONG OXIDIZERS MAY LIBERATE
HYDROGEN GAS.

HAZARDOUS DECOMPOSITION PRODUCTS: SULFURIC ACID MIST, SULFUR DIOXIDE AND CARBON
MONOXIDE MAY BE RELEASED WHEN ELECTROLYTE
DECOMPOSES. NO DECOMPOSITION FOR LEAD AND LEAD
COMPOUNDS.

**CONDITIONS CONTRIBUTING TO HAZARDOUS
POLYMERIZATION:** WILL NOT OCCUR.

SECTION VII: SPILL OR LEAK PROCEDURES

**STEPS TO BE TAKEN IF MATERIAL
IS SPILLED OR RELEASED:** SHOULD A BATTERY BREAK OPEN, ISOLATE THE AREA. PICK UP AND
CONTAINERIZE ALL BATTERY PARTS AND MATERIALS. LIMIT PERSONAL
EXPOSURE WITH GLOVES, EYE AND FACE PROTECTION. ELECTROLYTE SHOULD
BE ABSORBED WITH A NON-ORGANIC TYPE ABSORBENT SUCH AS DRY SAND OR
EARTH. AVOID DILUTION WITH WATER. LEAD SPILLED FROM THE BATTERY
SHOULD BE HEPA VACUUMED OR WET MOPPED, DO NOT DRY SWEEP OR USE
COMPRESSED AIR.

NEUTRALIZING CHEMICALS: USE SODA ASH OR BAKING SODA TO NEUTRALIZE THE ELECTROLYTE.

WASTE DISPOSAL METHODS: BATTERY PARTS MAY BE RECYCLED BY AN EPA-PERMITTED SECONDARY LEAD
SMELTING FACILITY OR DISPOSED OF AS HAZARDOUS WASTE PURSUANT TO
RCRA REQUIREMENTS.

SECTION VIII: SPECIAL PROTECTION INFORMATION

**HANDLING AND STORAGE:
OTHER PRECAUTIONS:** EXERCISE CAUTION IN HANDLING AND STORAGE DUE TO WEIGHT OF UNITS.
DO NOT ALLOW METAL OR OTHER CONDUCTIVE MATERIAL TO SHORT CIRCUIT
TERMINALS. HEAT, SPARK, DAMAGE TO ELECTRICAL CIRCUITS, AND FIRE MAY
RESULT FROM SHORT CIRCUITING. PRACTICE GOOD HYGIENE TO MINIMIZE
PERSONAL EXPOSURE. BATTERY MAY RELEASE HYDROGEN DURING CHARGING
OR IF EXPOSED TO HIGH TEMPERATURES. DO NOT STORE IN AIR TIGHT
CONTAINER.

VENTILATION REQUIREMENTS: BATTERY CHARGING AREAS MUST BE ADEQUATELY VENTILATED TO PREVENT
HAZARDOUS CONCENTRATIONS OF FLAMMABLE GAS OR ACID MIST. DESIGN
CRITERIA FOR VENTILATION SYSTEMS ARE CONTAINED IN THE INDUSTRIAL
VENTILATION MANUAL PUBLISHED BY THE ACGIH.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY: UNDER NORMAL CONDITIONS OF USE RESPIRATORY PROTECTION IS NOT
REQUIRED. HOWEVER, SHOULD CONDITIONS ARISE WHERE RESPIRATORS ARE
NEEDED, USE ONLY NIOSH/MSHA RESPIRATORS APPROVED FOR DUST, FUME
AND MIST.

**EYE:
SKIN:** CHEMICAL GOGGLES, FULL FACE SHIELD.
GLOVES APPROVED FOR SULFURIC ACID.

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OTHER: ACID RESISTANT APRON.

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS:

SHOULD A BATTERY BREAK OPEN AND A LEAD SPILL OCCURS, PRECAUTIONS SHOULD BE TAKEN TO PREVENT LEAD DUST FROM BECOMING AIR BORNE. INDIVIDUALS SHOULD WEAR RESPIRATORY PROTECTION, PROTECTIVE CLOTHING, RUBBER GLOVES AND EYE PROTECTION IF CONDUCTING A LEAD SPILL CLEAN UP.

AVOID THE USE OF NON-INSULATED TOOLS. IF THEY ARE REQUIRED, TAKE CARE NOT TO MAKE A CONNECTION BETWEEN THE TWO BATTERY TERMINALS AS SEVERE SPARKING MAY OCCUR WHICH COULD RESULT IN AN EXPLOSION. RINGS, METAL WATCH BANDS, NECKLACES AND OTHER JEWELRY SHOULD BE REMOVED WHILE SERVICING BATTERIES.

SUFFICIENT VENTILATION SHOULD BE PROVIDED IN ALL WORK AREAS TO PREVENT A BUILD UP OF DANGEROUS GASES. IF THE BATTERY ROOM IS AIR CONDITIONED AS PART OF AN OVERALL BUILDING SYSTEM, THE EXHAUST AIR FROM THE BATTERY ROOM SHOULD NOT BE RETURNED TO THE AIR DISTRIBUTION SYSTEM. THE ROOM SHOULD HAVE ITS OWN EXHAUST SYSTEM CONNECTED DIRECTLY TO OUTSIDE AIR. HYDROGEN AND OXYGEN GASES ARE PRODUCED DURING NORMAL BATTERY OPERATION, ESPECIALLY DURING CHARGING. HYDROGEN GAS IS LIGHTER THAN AIR, COLORLESS, ODORLESS AND TASTELESS, THEREFORE IT IS DIFFICULT TO DETECT WITHOUT SPECIAL EQUIPMENT. ALWAYS ASSUME THAT SMALL AMOUNTS OF GASES ARE PRESENT AND TAKE ALL NECESSARY PRECAUTIONS.

SECTION X: OTHER WARNINGS

PROPOSITION 65 WARNING

BATTERY POSTS, TERMINALS AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND REPRODUCTIVE HARM. **WASH HANDS AFTER HANDLING.**

SARA TITLE III

THE CHEMICALS LISTED BELOW ARE TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

MATERIAL OR COMPONENT	CAS #	WEIGHT %
Lead and lead compounds	7439-92-1	<95
Sulfuric acid	7664-93-9	<22
Antimony	7440-36-0	<0.4
Arsenic	7440-38-2	<0.1
Selenium	7782-49-2	<0.1

THIS LEAD-ACID BATTERY IS CLASSIFIED AS A MANUFACTURED ARTICLE (40 CFR 372.3) AND THE HAZARDOUS MATERIALS (LEAD, ANTIMONY, ARSENIC AND NICKEL COMPOUNDS) CONTAINED WITHIN ARE NOT RELEASED UNDER NORMAL CONDITIONS OF USE. SINCE THESE CHEMICALS ARE NOT RELEASED DURING NORMAL USE THEY ARE EXEMPT FROM THE REPORTING REQUIREMENTS CONTAINED IN 40 CFR PART 372 SUBPART B. HOWEVER, SULFURIC ACID MAY BE RELEASED INTO THE ENVIRONMENT IF A BATTERY BREAKS AND THEREFORE MAY NOT BE EXEMPT FROM THE REPORTING REQUIREMENTS OF SARA TITLE III. SEE EXEMPTIONS, 40 CFR 372.38 (b).

THIS INFORMATION SHOULD BE INCLUDED IN ALL MSDS'S THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL.

UPDATED BY: JESUS BUENO LUNA, ENVIRONMENTAL / HEALTH AND SAFETY COORDINATOR
DATE: MARCH 2006