

TELEDYNE BATTERY PRODUCTS MATERIAL SAFETY DATA SHEET  
DRY CHARGED BATTERY

HAZARD RATING



TELEDYNE BATTERY PRODUCTS  
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DRY CHARGED BATTERY

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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: April 2007

SECTION I: PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: TELEDYNE BATTERY PRODUCTS

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REDLANDS, CA 92374

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PRODUCT NAME: BATTERY, ELECTRIC STORAGE DRY

TRADE NAME: TELEDYNE BATTERY, GILL AIRCRAFT BATTERY, CENTURION, BIG BEAM, TELSTAR, SILTRON, AIR TRACTOR AND SCHWEIZER

SYNONYMS: GE-50, GE-51, GE-54, G-25, G-25M, G-35, G-35M, G-88, G-240, G-241, G-242, G-243, G-243W, G-244, G-245, G-246, G-246AT, G-247, G-638, G-639, G-6381, G-640, G-641, M83769/1-1, M83769/2-1, M83769/3-1, M83769/4-1, M83769/5-1, M83769/6-1, PS 14-13, 2HN (MS35000), 4HN (MS5047), 6TL (MS52149), T-1100, T-1100L, T-2200, T-2200L, T-6200, T-6200L, SUPER TELSTAR 12, TELSTAR 8, TELSTAR 12, L640, L6100, L6100S, L-1260, 12B60, 12B80, 12B80H, 12B90, 12B90H, L60, STARPOWER-25, STARPOWER-35, CENT-350, CENT-3100, CENT-660, CENT-680, CENT-680H, CENT-690, CENT 690H

CHEMICAL FAMILY: LEAD AND LEAD COMPONENTS

FORMULA: NOT APPLICABLE

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**DOT DESCRIPTION:** NOT SUBJECT TO DOT REQUIREMENTS.  
**INTENDED USE:** ELECTRIC STORAGE BATTERIES FOR AIRCRAFT, EMERGENCY LIGHTING, MARINE, GROUND SUPPORT AND ENGINE STARTING EQUIPMENT. CONTAINS NO ELECTROLYTE. MATERIAL SAFETY DATA SHEET FOR LEAD-ACID BATTERY APPLIES WHEN FILLED AND SERVICED WITH ELECTROLYTE.

**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 <sup>3</sup>	0.15 mg/m <sup>3</sup>	30 µg/m <sup>3</sup>
Antimony	7440-36-0	<1.1	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	Not Applicable
Arsenic	7440-38-2	<0.1	10 µg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	5 µg/m <sup>3</sup>
Barium sulfate	7727-43-7	<0.2	5 mg/m <sup>3</sup> **	10 mg/m <sup>3</sup>	Not Applicable
Calcium compounds	7440-70-2	<0.1	5 mg/m <sup>3</sup> *	2 mg/m <sup>3</sup> *	Not Applicable
Carbon black extracts	1333-86-4	<0.1	3.5 mg/m <sup>3</sup>	3.5 mg/m <sup>3</sup>	Not Applicable
Tin compounds	7440-31-5	<0.3	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	Not Applicable

\* As CaO

\*\* Respirable

**SECTION III: PHYSICAL DATA**

<b>BOILING POINT:</b>	LEAD	3164 °F (1740 °C) @ 760 mm Hg
	POLYPROPYLENE	>320 °F
<b>MELTING POINT:</b>	LEAD	621 °F (327.43 °C)
<b>SPECIFIC GRAVITY:</b>	LEAD	11.34
<b>VAPOR PRESSURE:</b>	LEAD	NEGLIGIBLE
<b>VAPOR DENSITY:</b>	LEAD	N/A
<b>SOLUBILITY:</b>	LEAD	INSOLUBLE IN WATER
<b>% VOLATILES BY VOL:</b>		NEGLIGIBLE
<b>%EVAPORATION RATE:</b>	LEAD	N/A
<b>PH:</b>		NA

**APPEARANCE AND ODOR:** NO ODOR. BATTERY CASE IS PINK, WHITE, OFF-WHITE, OR BLACK.

**SECTION IV: HEALTH HAZARD INFORMATION**

**ROUTES OF EXPOSURE**

**INHALATION:** 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:** LEAD IS NOT READILY ABSORBED THROUGH THE SKIN.

**EYE CONTACT:** LEAD DUST, VAPOR OR FUME MAY CAUSE IRRITATION.

**INGESTION:** 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:** ACUTE UNTREATED OVEREXPOSURE TO LEAD MAY LEAD TO WEAKNESS, VOMITING, LOSS OF APPETITE, UN-COORDINATED BODY MOVEMENTS, CONVULSIONS, STUPOR AND POSSIBLY COMA.

**CHRONIC**

**OVEREXPOSURE:** 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.

<b>CARCINOGENICITY</b>	<b>IARC</b>	<b>NTP</b>	<b>OSHA</b>
Lead	X		X
Arsenic	X	X	X

**EMERGENCY AND FIRST AID PROCEDURES**

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

**SKIN:** NOT A DIRECT ROUT OF ENTRY.

**INHALATION:** REMOVE EMPLOYEE FROM AREA OF EXPOSURE. GET IMMEDIATE MEDICAL ATTENTION.

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

**SECTION VI: REACTIVITY DATA**

**CONDITIONS CONTRIBUTING TO INSTABILITY:** NONE  
**INCOMPATIBILITY:** CONTACT OF LEAD WITH STRONG OXIDIZERS MAY LIBERATE HYDROGEN GAS.  
**HAZARDOUS DECOMPOSITION PRODUCTS:** NONE  
**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. WHEN A BATTERY IS BEING FILLED WITH SULFURIC ACID ELECTROLYTE, ISOLATE THE AREA SHOULD A BATTERY BREAK OPEN. 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.

### 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:

EXERCISE CAUTION IN HANDLING AND STORAGE DUE TO WEIGHT OF UNITS.

### OTHER PRECAUTIONS:

USE CAUTION WHEN FILLING UNITS WITH ELECTROLYTE (BATTERY ACID, DILUTE SULFURIC ACID). WEAR ACID RESISTANT PLASTIC OR RUBBER GLOVES, EYE PROTECTION, APRON AND BOOTS. MATERIAL SAFETY DATA SHEET FOR LEAD-ACID BATTERY APPLIES WHEN FILLED WITH SULFURIC ACID ELECTROLYTE.

### 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:

CHEMICAL GOGGLES, FULL FACE SHIELD.

#### SKIN:

GLOVES APPROVED FOR SULFURIC ACID.

#### 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
Antimony	7440-36-0	<1.1
Arsenic	7440-38-2	<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:** April 2007