



MATERIAL SAFETY DATA SHEET

Alliant Small Caliber Ammunition Company, LLC MATERIAL SAFETY DATA SHEET

Cartridge, Blank, 5.56mm M200, 7.62 M82, .30 CAL M1909, & .50 CAL M1A1

I. General Information

Company's Name: Alliant Lake City Small Caliber Ammunition Company, LLC
Company's Street: PO Box 1000
Company's City: Independence
Company's State: MO
Company's Country: US
Company's Zip Code: 64051
Company's Info Phone #: (816) 796-7488
Date MSDS Prepared: 20 April, 2004
Revision Date: 2/22/2005
Cartridge Identification: Crimped brass cartridge tip, NATO head stamp "L C"

Transportation Accidents Call CHEMTREC: 1-800-424-9300

II. Ingredients/Identity Information

HAZARDOUS INGREDIENTS	CAS NUMBER	EXPOSURE LIMITS
Case (see below)		
Brass	NE	NE
Propellant (see below)		
Nitrocellulose	9004-70-0	NE
Nitroglycerin	55-63-0	PEL (C) 0.2 ppm/ 2 mg/m ³ , TLV 0.05 ppm
Graphite	7782-42-5	PEL (T) 15 mg/m ³ / (R) 3 mg/m ³ , TVL (R) 2 mg/m ³
Primer Composition (see below)		
Lead Styphnate	15245-44-0	PEL 50 µg/m ³ , TLV 0.05 mg/m ³ (As inorganic lead)
Barium Nitrate	10022-31-8	PEL 0.5 mg/m ³ , TVL 0.5 mg/m ³ (As Barium)
Antimony Sulfide	1345-04-6	PEL 0.5 mg/m ³ , TLV 0.5 mg/m ³ (As Antimony)
PETN (Pentaerythritol Tetranitrate)	78-11-5	
Aluminum powder	7429-90-5	PEL (T) 15 mg/m ³ / (R) 5 mg/m ³ , TVL (Metal dust) 10 mg/m ³ / (Pyro powders) 5 mg/m ³
Gum Arabic	9000-01-5	NE
Calcium Silicide	12013-56-8	NE
Tetracene	7440-02-2	NE
Magnesium Oxide	1309-48-4	PEL (Fume) 15 mg/m ³ , TLV 10 mg/m ³
Brass	N/A	NE

NE: None Established

LEAD MAY BE RELEASED DURING FIRING OF AMMUNITION. CARE SHOULD BE TAKEN IN CLEANING OF RANGE FACILITIES MINIMIZE EXPOSURE TO LEAD. PERSONS ENGAGED IN THESE ACTIVITIES SHLD WEAR PROT CLTHG W/ APPROP NIOSH/ MSHA APPRVD RESP. RANGE OPERATORS SHOULD CONSULT OSHA 1910.1025 FOR DETAILS PERTAIN TO HNDLG LEAD IN WORK ENVIRONMENT.



MATERIAL SAFETY DATA SHEET

III. Physical/Chemical Characteristics

Appearance And Odor: BRASS CASE
NO ODOR
Boiling Point: N/A
Melting Point: N/A
Vapor Pressure (MM Hg/70 F): N/A
Vapor Density (Air=1): N/A
Specific Gravity: 3.1-8
Evaporation Rate And Ref: NOT APPLICABLE
Solubility In Water: NONE
Percent Volatiles By Volume: N/A

IV. Fire and Explosion Hazard Data

Flash Point: NOT APPLICABLE
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Extinguishing Media: WATER.
Special Fire Fighting Procedures: USE NIOSH/MSHA APPROVED SCBA & FULL PROT EQUIP (FP N). USE WIDE FOG PATTERN NOZZ TO REDUCE ANY LOW VELOCITY FRAGMENTS. USE WATER TO COOL ORDINARY COMBUSTIBLES
Unusual Fire And Explosive Hazards: **MAY IGNITE IF HEATED TO 250F INDEPENDENT OF AIR. UNCONFINED IGNITED CARTRIDGES CAN PRODUCE LOW VELOCITY METALLIC FRAGMENTS WHICH MAY CAUSE EYE INJURY. INITIATION IN A WEAPON WILL PRODUCE METALLIC PARTICLES. DO NOT AIM OR FIRE TOWARD PERSONS CLOSER THAN 100 YARDS IN FRONT OF THE WEAPON.**

V. Reactivity Data

Stability: Conditions To Avoid (Stability): STABLE UNDER NORMAL USE CONDITIONS. INDIVIDUAL CARTRIDGES MAY IGNITE IF PRIMER IS STRUCK/IF CARTRIDGE IS EXPOSED TO EXTREME HEAT.
Materials To Avoid: INCOMPATIBLE W/ACIDS, ALKALIES, AMMONIA, AND OTHER CORROSIVE MATERIALS.
Hazardous Decomposition Products: OXIDES OF BARIUM/LEAD/ANTIMONY/ALUMINUM/MAGNESIUM/ NITROGEN/CARBON/SULFUR. LEAD & ANTIMONY FUMES MAY ALSO BE PRODUCED.

VI. Health Hazard Data

LD50-LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: INHAL: ACUTE-INHALATION OF SMOKE MAY PRODUCE MILD THROAT/EYE IRRITATION. CHRONIC-PRLNG/RPTD OVEREXP TO FIRED CARTRIDGE GASSES & PARTICULATES MAY RSLT IN ELEVATED BLOOD LEAD LEVELS. SYMP OF CHRONIC OVEREXP TO LEAD MAY INCL ELEVATED BLOOD LEAD LEVELS, ELEVATED ZPP, WEIGHT LOSS, HEADACHE, DEPRESSED HEMOGLOBIN, & FATIGUE. (EFFECTS OF OVEREXP)
Carcinogenicity - NTP: YES
Carcinogenicity - IARC: YES
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: LEAD: GROUP 2B (IARC). NICKEL: GROUP 2B (IARC), GROUP 2 (NTP).
Signs/Symptoms Of Overexp: HLTH HAZ: SKIN:ACUTE/CHRONIC-LEAD IS NOT ABSORB THRU SKIN. EYES:ACUTE-CONT W/LG VOL OF SMOKE MAY CAUSE MINOR IRRIT.



MATERIAL SAFETY DATA SHEET

CHRONIC-NONE REPORTED. INGEST:ACUTE-ACCIDENTAL INGEST OF LEAD MAY OCCUR FROM POOR PERSONAL HYGIENE ASSOC W/HNDLG OF LEAD BEARING MATLS. MAY RSLT IN ABDOM CRAMP/FATG/ CONSTIP & DISTURB OF SLEEP.(SUPP DATA)
Med Cond Aggravated By Exp: EXPOSURE TO LEAD MAY AGGRAVATE ANEMIA. PERSONS TAKING BISMUTH CONTAINING MEDICATIONS SHOULD CONSULT W/THEIR MEDICAL PROVIDED PRIOR TO ROUTINE EXPOSURE TO AIRBORNE, RESPIRABLE LEAD.
Emergency/First Aid Proc: INHAL: MOVE TO FRESH AIR. IF BREATHING STOPPED, ADMIN ARTF RESP. IF CHRONIC SYMPTOMS SHOULD APPEAR, CONSULT MEDICAL PROVIDER. RECOMMEND WASH HANDS THOROUGHLY W/SOAP & WATER BEFORE EATING/SMOKING. EYES: MOVE TO FRESH AIR. IF FOREIGN BODY IS SUSPECTED, WASH EYES IN FRESH WATER FOR A MINIMUM OF 15 MIN, GET MEDICAL ASSISTANCE. INGEST: GET MEDICAL ASSISTANCE.

VII. Precautions for Safe Handling and Use

Steps If Material Released/Spill: AVOID CONDITIONS DETAILED IN REACTIVITY DATA SECTION. IF CONTAINER SHOULD RUPTURE, PLACE ALL LOOSE CARTRIDGES FROM BROKEN SHIPPING CASES INTO A STURDY CONTAINER; SECURE CONTAINER CAREFULLY.
Neutralizing Agent: NONE
Waste Disposal Method: CONTACT MANUFACTURER. DISPOSAL MUST BE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS (FP N).
Precautions-Handling/Storing: STORE IN DRY, COOL AREA IN ORIGINAL CONTAINER TO ASSURE PERFORMANCE. KEEP OUT OF REACH OF CHILDREN. AVOID STRIKING THE PRIMER OF UNCHAMBERED CARTRIDGES.
Other Precautions: REMOVE AMMUNITION FROM SERVICE IF ANY OF FOLLOWING CONDITIONS HAVE OCCURED: PROLONGED STORAGE AT OR ABOVE 200F, EVIDENCE OF CORROSION, PHYSICAL DAMAGE, EXPOS TO OIL/SPRAY TYPE LUBRICANTS.

VIII. Control Measures

Respiratory Protection: USE NIOSH/MSHA APPROVED LEAD DUST/FUME RESPIRATOR WHILE CLEANING RANGE FACILITIES. CONSULT OSHA 1910.1025 FOR EXACT REQUIREMENTS.
Ventilation: USE IN WELL VENTILATED AREA. INDOOR SHOOTING RANGES SHOULD MAINTAIN AN AIR FLOW OF 20 CFM/SQ FT OF CROSS SECTIONAL AREA.(ING 22)
Protective Gloves: IMPERVIOUS GLOVES (FP N).
Eye Protection: SAFETY GOGGLES (FP N).
Other Protective Equipment: HEARING PROTECTION RECOMMENDED WHEN FIRING. IT SHOULD HAVE AN EPA-NRR OF 20 OR GREATER.
Work Hygienic Practices: WASH HANDS THOROUGHLY WITH SOAP & WATER BEFORE EATING OR SMOKING.
Supplemental Safety & Health Data: APPEAR/ODOR: NO ODOR.
FIRE FIGHTING PROCEDURE: BELOW IGNITABLE TEMP. EXPLO HAZ: OR SUPERFICIAL SKIN WOUNDS IF UNPROT BY STD FIRE-FIGHTER TURNOUT GEAR. EFFECTS OF OVEREXP: CHRONIC-CHRONIC OVEREXP TO LEAD MAY RSLT IN DEPRESSED HEMOGLOBIN LEVELS, HEADACHES, FATIGUE & WEIGHT LOSS, W/ELEVATED BLOOD LEAD/ZPP LEVELS. (ING 08)

IX. Transportation Data

Transportation and storage must be in accordance with, local, state, and federal regulations.

Proper Shipping Name	UN Number	Hazard Classification	Packing Group
Cartridges, Small Arms, Blank	UN0338	1.4C	II
Cartridges, Small Arms, Bank	UN0014	1.4S	II



MATERIAL SAFETY DATA SHEET

X. Disposal Data

UNUSED CARTRIDGES SHOULD BE DISPOSED OF BY INCINERATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

XI. Label Data

Common Name: CENTERFIRE METALLIC CARTRIDGE, BLANK

Chronic Hazard: YES

Signal Word: Explosive

Acute Health Hazard-Slight: X

Contact Hazard-Slight: X

Fire Hazard-Slight: X

Reactivity Hazard-None: X

Special Hazard Precautions: MAY IGNITE IF HEATED TO 250°F. MAY IGNITE IF PRIMER IS STRUCK. ACUTE: CONTACT WITH LARGE VOLUMES OF SMOKE MAY CAUSE MINOR EYE IRRITATION. INHALATION OF SMOKE MAY PRODUCE MILD THROAT AND EYE IRRITATION. INGESTION OF LEAD MAY RESULT IN ABDOMINAL CRAMPING, FATIGUE, CONSTIPATION, AND DISTURBANCE OF SLEEP. CHRONIC: CANCER HAZARD. INORGANIC LEAD IS LISTED AS CARCINOGENIC. SYMPTOMS OF CHRONIC EXPOSURE TO LEAD INCLUDE ELEVATED ZPP AND BLOOD LEAD LEVELS, DEPRESSED HEMOGLOBIN LEVELS, HEADACHE, FATIGUE, AND WEIGHT LOSS. LEAD APPEARS ON THE NAVY REPRODUCTIVE HAZARDS LISTS (FP N).

Protect Eye: Y

Protect Skin: Y

Protect Respiratory: Y

XII. ADDITIONAL INFORMATION

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT.

"To the best of our knowledge the information contained herein is correct. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the product is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the product is used safely.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS."

ATK LAKE CITY ARMY AMMUNITION PLANT MSDS CONTROL GROUP

ALLIANT TECHSYSTEMS

HWYS. 7 & 78

P.O. BOX 1000

INDEPENDENCE, MO 64051-1000

PHONE NUMBER (816) 796-7488

FOR ALL TRANSPORTATION ACCIDENTS CALL CHEMTREC AT 1-800-424-9300