

MATERIAL SAFETY DATA SHEET AUTOLIV NORTH AMERICA

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME.....Micro Gas Generator, ITO MGG (ZPP)
SYNONYMS/PROGRAMSPLP 1.0, PBP 1.0, 1.3
PRODUCT CODEMSDS No. 117
SUPPLIER/MFG.Autoliv North America
Attn: HazCom Coordinator M/S A16630
3350 Airport Rd.
Ogden, UT 84405 USA
AUTOLIV ASP, Inc. (24 HOUR)(435) 734-6835
CHEMTREC USA (EMERGENCY)..(800) 424-9300

Note: This is a manufactured article.

2. TYPICAL COMPOSITION

<u>INGREDIENTS</u>	<u>%(wt.)</u>	<u>CAS No.</u> ¹	<u>OSHA-PEL</u> ²	<u>ACGIH-TLV</u> ³
Hardware & Aluminum Casing	85-90%	NA*	NA*	NA*
Initiator Assembly				
Zirconium	<1%	7440-67-7	5 mg/m ³	5 mg/m ³
Potassium Perchlorate	<1%	7778-74-7	NA*	NA*
Viton	<1%	NA*	NA*	NA*
Cup Assembly				
Nitrocellulose	<8%	9004-70-0	NA*	NA*
Diphenylamine	<1%	122-39-4	NA*	NA*

1 Chemical Abstracts Service Number

2 Occupational Safety and Health Administration - Permissible Exposure Limit

3 American Conference of Governmental Industrial Hygienists - Threshold Limit Value

* Not applicable due to present form

** Not established

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

The tamper-resistant, sealed metal container poses limited risk of chemical exposure before deployment. It may cause some skin and respirable irritation after deployment. If pretensioner is incinerated, broken, drilled into, crushed, or electric current is connected to lead wires, a physical hazard may exist. This Micro Gas Generator contains a small percentage by weight of solid explosives. *Do not* drill, break, or breach the metal container.

NOTE: If the Micro Gas Generator is ruptured and gas generant is present, or individuals are exposed to repeated deployments, as experienced in a testing situation without safe and adequate engineering controls, see Autoliv MSDS #093 (Initiator Assembly) and MSDS #095 (ZPP) for additional information.

POTENTIAL HEALTH EFFECTS

ROUTE (S) OF ENTRYNone expected when used as intended.

HUMAN HEALTH EFFECTS AND SYMPTOMS OF OVEREXPOSURE

INHALATION ⁽¹⁾None expected when used as intended.

SKIN CONTACT ⁽¹⁾None expected when used as intended.

EYES ⁽¹⁾None expected when used as intended.

INGESTION ⁽¹⁾None expected when used as intended.

CARCINOGENICITYNone expected when used as intended.

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURENone expected when used as intended.

- (1) Effluent gases from multiple deployments in testing situations may cause skin, eye, or mucous membrane irritation. Effluent gases in these situations must be effectively controlled through engineering systems designed and tested to remove applicable contaminants or PPE that will accomplish the same effect.

4. FIRST AID MEASURES

INHALATIONNone expected when used as intended.

EYESNone expected when used as intended.

SKINNone expected when used as intended.

INGESTIONNone expected when used as intended.

5. FIRE FIGHTING MEASURES

FLASH POINTNot Applicable

AUTO IGNITION

TEMPERATUREApproximately 318°F (159°C)

EXPLOSION LIMITSNot Applicable

EXPLOSION HAZARDNone expected, when used as intended.

EXTINGUISHING MEDIAWater may be used to cool unburned micro gas generators.

SPECIAL FIRE FIGHTING

PROCEDURES Use normal fire fighting procedures. This device will be activated by extended exposures to temperatures above 350°F (177°C), and when activated, can produce potassium chloride, potassium fluoride, potassium oxide, zirconium chloride, zirconium fluoride, zirconium oxide, and oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK

PROCEDURES When handled and installed properly, no spills or leaks should occur. If a spill or leak occurs, contain the material, wet with water, and clean up with non-sparking tools. Avoid spark, static electricity, friction, impact and open flame. Avoid raising dust. Ventilate area. Wash spill site with water after material pick-up is complete.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE <140°F (60°C)

HANDLING AND STORAGE

PRECAUTIONS Inspect unit for damage following shipment and prior to installation. Store damaged or defective units in dry place, in limited quantities. Recycling this Micro Gas Generator and other gas generators or inflators may be accomplished through Autoliv North America. For information, call or write to address on page 1, Attention Environmental Coordinator.

POST DEPLOYMENT

HANDLING GUIDELINES After deployment, the surface of the Micro Gas Generator may have trace amounts of particulate and is usually hot. Residue may be irritating to the skin, eyes, and mucous membranes. Latex under leather gloves or equivalent is recommended if handling hot fired generators.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EFFLUENT GASES⁽²⁾ None required when used as intended.

EYE PROTECTION⁽²⁾ None required when used as intended.

SKIN PROTECTION⁽²⁾ None required when used as intended.

RESPIRATORY/VENTILATION

REQUIREMENTS⁽²⁾ None required when used as intended.

EXPOSURE LIMITS See section 2.

(2) Multiple deployments, seen in testing conditions, pose different risks to potentially elevated effluent gas levels. In these potentially elevated concentration situations, effluent gases may cause skin, eye, lung, or mucous membrane irritation and other symptoms associated with effluent gasses and particulate. Use approved administrative and/or engineering controls to minimize exposure to effluent gases. Use approved personal protective equipment when administrative and/or engineering controls are not adequate or have not been implemented and

have a competent Occupational Health and Safety Engineer determine if the test environments are safe.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM..... Sealed metallic canister with molded plastic wire connector.
COLOR..... Metallic
ODOR No odor
BOILING POINT Not applicable
MELT POINT/FREEZE POINT Not applicable
pH..... Not applicable
SOLUBILITY IN WATER For chemicals within unit: slight.
SPECIFIC GRAVITY Not applicable
% VOLATILE BY WEIGHT Not applicable
VAPOR PRESSURE Not applicable
VAPOR DENSITY..... Not applicable
BULK DENSITY Not applicable
**COEFFICIENT OF WATER/
OIL DISTRIBUTION**..... Not applicable
EVAPORATION RATE Not applicable

10. STABILITY AND REACTIVITY

STABILITY..... Sealed unit is stable when used as designed. May become unstable if heated.
HAZARDOUS
POLYMERIZATION..... None
INCOMPATIBILITIES None in present form.
DECOMPOSITION PRODUCTS..... Potassium chloride, potassium fluoride, potassium oxide, zirconium chloride, zirconium fluoride, zirconium oxide, and oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION

INHALATION Not applicable in present form.
INGESTION..... Not applicable in present form.
SKIN & EYE IRRITATION..... Not applicable in present form.
**MUTAGENICITY/
REPRODUCTIVITY/
CARCINOGENICITY** Not applicable in present form.

12. ECOLOGICAL INFORMATION

Perchlorate Material – Special Handling May Apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate

13. DISPOSAL CONSIDERATIONS

Please see Section 15 below.

14. TRANSPORTATION INFORMATION

This MSDS is not intended to have all required shipping information.

Identification #: *UN0323*
Proper Shipping Name: *Cartridges, power devices*
Hazard Class: *Class 1.4S*
Packaging Group: *PGII*

*These devices are not considered a hazardous substance or a marine pollutant.

For further information contact:

*Autoliv Logistics Services
3350 Airport Road
Ogden, UT, 84405*

15. REGULATORY INFORMATION

OSHA Status..... Manufactured Article
TSCA Status The components of this product are listed on the
Toxic Substances Control Act (TSCA)
inventory.
CERCLA Reportable Quantity, 40 CFR 302: No
EPCRA Section 302, Extremely
Hazardous Substances: No
EPCRA Section 311/312, Hazard Category: Yes
EPCRA Section 313, Toxic Chemicals: No
RCRA Information: This product as described in this MSDS could
meet the definition of a RCRA Reactive
Hazardous Waste (D003) under 40 CFR 261.23.
Other regulations may apply. Please check
federal, state or provincial and local regulations.
Information for Community Not Determined
Classifications, Risks and Safety Phrases Not Determined

16. OTHER INFORMATION

The environmental, health and safety information contained herein is given in compliance with statutory obligations and relates only to the substance/preparation described in this material safety data sheet. This material safety data sheet is provided for information only, and is not intended to create or imply any representation, agreement or warranty, whether express or implied, except to the extent required by applicable law. The environmental, health and safety information contained herein is believed to be accurate based on our current knowledge. It remains the sole responsibility of the customer to provide a safe workplace and to comply with all applicable laws and regulations. Nothing contained herein is to be construed as a recommendation for use in violation of any patent or of applicable laws or regulations.

HMIS by NPCA Criterion (For intact Micro Gas Generator)

Health.....0
Flammability0
Reactivity 1
PPE.....X

HISTORY

REASON FOR ISSUENew MSDS

PREPARED BYAutoliv Regional Industrial Hygiene

APPROVED BYAutoliv Regional Health, Safety & Environmental

APPROVAL DATE4/22/08

SUPERSEDES DATENA

SUPERSEDES NUMBERNA