SAFETY DATA SHEET (GHS / CLP FORMAT)

HCS 2012 (29 CFR 1910.1200) / (EC) No. 1907/2006 / (EC) 453/2010

English Version 2.0 Prepared: 24-Jun-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

1.1 Product Name: YB0123 - Tool Lubricant

1.2 Identified Uses : Lubricating Grease
Uses advised against : Food contact applications, medical & implantation uses.

1.3 Company : Aerospace Lubricants, Inc.
1600 Georgesville Rd.
Columbus, OH 43228
USA

Customer Service: Tel: 1 (614) 878-3600
General E-mail: info@aerospacelubricants.com

SDS Prepared by: Joseph Heer, Ph.D.
SDS E-mail: joe@aerospacelubricants.com

1.4 Emergency Phone Number : Tel: (614) 878-3600

2. HAZARDS IDENTIFICATION

2.1 Classification according to US GHS regulation HCS 2012 (29 CFR 1910.1200), European regulation (EC) 1272/2008 and European Directive 67/548/EEC or 1999/45/EC

Acute toxicity, oral, 5
Aquatic environment hazard, acute, 3

2.2 GHS / CLP Label Elements (Regulations: US CFR 1910.1200 & EU (EC) No 1272/2008)

Signal word: Warning!

Hazard statements:
H303 May be harmful if swallowed.
H402 Harmful to aquatic life.

Precautionary statements:
Prevention:
P273 Avoid release to the environment.

Response:
P312 Call a POISON CENTER or doctor/physician if you feel unwell.

Storage:

Disposal: P501 Dispose of contents & container in accordance with local & national regulations.

Label elements / pictograms: None required

2.3 Other Hazards
Thermal decomposition can lead to release of toxic and corrosive gases.
Smoking contaminated tobacco is a common way to inhale hazardous decomposition vapors.

2.4 Emergency Overview
Thermal decomposition can lead to release of toxic and corrosive gases.
Ecological injuries are not known or expected under normal use.

Skin: Dust or vapor may cause: Discomfort, itching, redness, or swelling.
Eyes: Dust or vapor may cause: Discomfort, tearing, redness.
Respiratory: Dust or vapor may cause: Respiratory tract irritation.
Carcinogenicity: No component of this material with concentration > 0.1% is listed by IARC, NTP, or OSHA as a carcinogen.

2.5 Decomposition Vapor Hazard: Material may decompose if severely overheated or burned.
2.6 HMIS / NFPA Information 2,1,0B/ 2,1,0

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous / Reportable Ingredients	%	CAS number	EC Number	Classification	
				29 CFR 1910.1200 & (EC) 1272/2008	Hazard Codes

Polyalphaolefin	1 - 100%	68037-01-4	500-183-1	Not classified	None
Sodium nitrite	1 - 5%	52439-06-2	unknown	Ox. Sol. 3; Acute Tox. 3; Eye Irrit. 2A; Aquat. Acute 1	H272, H301, H319, H400
Benzothiazole thione amine derivatives	0 - 2%	68911-68-2	272-782-3	Acute Tox. 4 (oral); Skin Irrit. 2; Eye Irrit. 2B;	H302, H315, H319

Other ingredients, if present, are under reportable limits and do not require reporting under current laws & regulations. GHS & CLP classifications are based on all current available data, and are subject to revision as more information becomes available.

4. FIRST AID MEASURES

4.1 Description of Necessary First Aid Measures :

4.1.0 General information:

Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing.
In case of persisting adverse effects, consult a physician. Show this safety data sheet to the doctor in attendance.

4.1.1 Inhalation

In case of persisting adverse effects, consult a physician. Show this safety data sheet to the doctor in attendance.

Exposure to decomposition products (Inhalation):

Move affected person to fresh air.
Provide oxygen or artificial respiration if needed.
Symptoms of poisoning may develop many hours after exposure.
Consult a physician. Keep under medical supervision for at least 48 hours.

4.1.2 Eye Contact:

Rinse eyes immediately with plenty of water for 15 minutes, including under the eyelids.
If eye irritation develops or persists, consult a specialist.

Exposure to decomposition products (Eyes) :

Remove contact lenses, if present.
Rinse eyes immediately with plenty of water for 15 minutes, including under the eyelids.
Get medical attention immediately.

4.1.3 Skin contact:

Wash off affected area with soap and water.
Remove contaminated clothing and launder clothing before reuse.
Get medical attention if symptoms develop or persist.

Exposure to decomposition products (Skin):

Wash off with plenty of water. Call a physician if irritation develops or persists.

4.1.4 Ingestion:

Rinse out mouth and give plenty of water to drink. Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
If symptoms develop or persist, call a physician.
If large quantities of this material are swallowed, seek medical advice immediately.

4.2 Most important symptoms/effects, acute and delayed

	Overview of symptoms:	See Section 11.1 for information on toxicological effects.
4.2.1	**Inhalation:**	Inhalation of fumes may cause irritation.
4.2.2	**Skin contact:**	Contact with skin may cause irritation, redness.
4.2.3	**Eye Contact:**	Contact with eyes may cause irritation, redness.
4.2.4	**Ingestion:**	Ingestion may provoke the following symptoms: Nausea, Vomiting, Diarrhea, Abdominal Pain

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Indications: No special treatments required. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water Spray or Mist
Extinguishing Powder
Alcohol-resistant Foam
Dry Chemical
Carbon dioxide (CO_2)

Unsuitable extinguishing media

Full water jet, which may spread fire.

5.2 Special exposure hazards in a fire

In high temperature or fire conditions, hazardous or toxic decomposition products may be produced (see 5.3 below)

5.3 Hazardous decomposition products

Exposure to decomposition products may be a hazard to health.

Various decomposition products may be formed, including:

Carbon oxides and other hydrocarbon combustion compounds, smoke, and fumes.

Tetrafluoroethylene, hexafluoropropene, perfluoroisobutene.

Finely divided aluminium, ammonium salts, amines, acids.

5.4 Advice for firefighters

Special protective equipment for firefighters

Wear NIOSH/MSHA-approved self-contained breathing apparatus and protective suit.

Special procedures in a fire

Evacuate personnel to safe areas.

Approach from upwind.

Protect intervention team with a water spray as they approach the fire.

Keep containers and surroundings cool with water spray.

Keep product and empty containers away from heat and sources of ignition.

Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

5.5 Other information

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use appropriate personal protective equipment during clean-up.

Advice for non-emergency personnel

Prevent further leakage or spillage if safe to do so.

Advice for emergency responders

Ensure adequate ventilation. Avoid dust or mist formation.

Keep away from open flames, hot surfaces and sources of ignition.

Material can create slippery conditions. Sweep or soak up to prevent slipping hazard.

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Product should NOT be released into the environment.

Do not flush into surface water or sanitary sewer system.

Prevent material from entering sewers, waterways, or low areas.

In case of accidental release or spill, immediately notify the appropriate authorities if required by national, state/provincial and local laws and regulations.

6.3 Methods and materials for containment and cleaning up

Sweep up or soak up with inert absorbent material. Put in suitable container for disposal.

Clean contaminated floors and objects thoroughly while observing environmental regulations.

Suitable Material for picking up: Dry Earth, Sand, Other non-combustible materials

6.4 References to other sections

For emergency contact information, see section 1.

For protective measures, see sections 7 and 8.

For disposal instructions, see section 13.

7. HANDLING AND STORAGE

The information in this section contains generic advice and guidance. Specific situations may require additional actions.

7.1 Precautions for safe handling

This product may contain small amounts of residual Hydrogen Fluoride that can be released during handling or use.

Container should only be opened in a well ventilated area.

If workplace exposure limits are exceeded, wear suitable respiratory equipment.

Avoid dust or vapor formation.

Avoid inhalation of vapor or mist.

Do not contaminate tobacco products.

Ensure adequate ventilation.

Use personal protective equipment. (Section 8)

Keep away from heat and sources of ignition.

To avoid thermal decomposition, do NOT overheat.

Take measures to prevent the build up of electrostatic charge.

Clean and dry piping circuits and equipment before any operations.

Ensure all equipment is electrically grounded before beginning transfer operations.

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages.

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling.

Remove and wash contaminated clothing before reuse.

7.2 **7.2 Conditions for storage, including incompatibilities**

Storage

Keep container tightly closed, dry, and upright. Protect from contamination.
Always keep in containers of the same material as the original material.
Keep in a cool well-ventilated place.
Keep away from heat and sources of ignition.
Keep in properly labelled containers.
Keep away from combustible materials.
Provide tight electrical equipment well protected against corrosion.
Keep away from tobacco products.
Stable under recommended storage conditions. For further information see Section 10 .

Recommended Storage Temperatures: Min 0°C
Max 40°C

Packaging materials

Incompatibilities

Keep away from:

Combustible materials, flammable materials, non-aqueous alkalis, molten alkali metals.

7.3 **Specific end uses**

Lubricating greases and fluids
For further information on specific applications, please contact: Aerospace Lubricants, Inc.

7.4 **Other information**

Provide tight electrical equipment well protected against corrosion.
Refer to protective measures listed in sections 7 and 8.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

The information in this section contains generic advice and guidance. Specific situations may require additional actions.

Occupational exposure limit values:

Ingredient Name:	Source	Type	Limit	Comments

8.2 **Environmental exposure controls:**

General: Dispose of rinse water in accordance with local and national regulations.

Engineering Controls: Apply technical measures to comply with the occupational exposure limits.
Provide appropriate local exhaust when product is heated.
Refer to protective measures listed in sections 7 and 8.

8.3 **Personal protective measures and equipment:**

Respiratory protection : **Recommeded:** Dust mask, if working with dusty materials. Respirator, if working with hot materials.
Use respirator when performing operations involving potential exposure to dust clouds or product vapor.
In case of decomposition (Sec. 10), wear a suitable respirator with a combination filter for organic vapor & particulate.
Use only respiratory protection that conforms to national / international standards, such as NIOSH.

Hand protection : **Recommended:** Rubber, neoprene, or nitrile gloves.

Select and use gloves based on the likelihood and severity of exposure, following manufacturers' recommendations.

In case of high-temperature processing wear: heat resistant gloves. (EN 407).
If risk of decomposition, wear: rubber or neoprene gloves (EN 374).

Eye/face protection : **Recommended:** Safety glasses with side-shields (EN 166)
If splashes are likely to occur, wear: Tightly fitting safety goggles
In case of high-temperature processing wear: Tightly fitting safety goggles

Skin & body protection : **Recommended:** Normal chemical work clothing (Long-sleeved clothing, safety shoes)
If splashes are likely to occur, wear: Coverall, chemical splash goggles, face shield.
In case of high-temperature processing wear: Heat resistant clothing and footwear.

General hygiene measures : Ensure that eyewash stations and safety showers are close to the workstation location.
When using, do NOT eat, drink or smoke.
Wash hands before breaks and at the end of workday.
Handle in accordance with good industrial hygiene ands safety practice.
Regularly clean equipment, work area and clothing.
Do not breathe fumes evolved from hot lubricant materials.

Additional information : These precautions are for room temperature handling. Use at elevated temperatures or conditions that generate fine particles may require additional precautions.

9. PHYSICAL AND CHEMICAL PROPERTIES

General Physical Form :	Semi-solid Grease
Color :	Tan
Odor :	Slight petroleum odor
Odor Threshold.	No information available.
pH:	Not applicable.
Boiling Point:	Not applicable.
Melting Point (Dropping Point):	> 250˚C
Flash Point:	> 245°C (473°F)
Evaporation Rate:	Not available.
Ignition Temperature:	Not available.
Flammability:	Not available.
Lower Explosion Limit:	Not available.
Upper Explosion Limit:	Not available.
Auto-ignition temperature:	> 420°C (788°F)
Vapor Pressure:	< 0.13 kPa @ 20°C (68°F)
Specific Gravity:	0.75 - 0.95 (25˚C / 77˚F)
Solublity in water:	Insoluble.
Partition coefficient: (n-octanol / water):	No data available.
Decomposition Temperature:	> 250°C (>482°F)
Viscosity:	Not applicable.

The above information is not intended for use in preparing product specifications. Please contact Aerospace Lubricants before writing specifications.

10. STABILITY AND REACTIVITY

10.1 Reactivity : No dangerous reactions known under conditions of normal use.

10.2 Stability : Stable under recommended storage conditions. Contact with some metals lowers decomposition temperature.

10.3 Possibility of hazardous reactions : Hazardous polymerization will not occur. No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid : Avoid use in presence of high voltage electric arc and in absence of oxygen.
Keep away from heat, flames & sparks. To avoid thermal decomposition, keep at temperatures below: 250°C (>482°F)

Stable under normal conditions. High temperatures can produce irritating and toxic fumes.

10.5 Materials to avoid :

Metals promote and lower decomposition temperature.
Contact with incompatible materials can cause fire and explosion.

Keep away from:

Combustible material, Flammable materials, non-aqueous alkalis, molten alkali metals
Strong oxidizers, strong acids and bases, caustic material
Finely divided aluminium, Ammonium salts, Amines, Acids

10.6 Hazardous decomposition products :

Normal conditions: Hazardous decomposition products should not be produced.

Under combustion or decomposition conditions:

Carbon oxides and other hydrocarbon combustion compounds.
Tetrafluoroethylene, hexafluoropropene, perfluoroisobutene.
Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

11.1 Information on the likely routes of exposure:

Inhalation: Vapors from heated material may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion: May cause skin irritation or dermatitis.

Skin contact: Contact with the skin during product use is not expected to result in significant irritation.

Eye contact: Vapors from heated material may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

11.2 Acute toxicity:

Inhalation: This product cannot normally be inhaled. However, exposure to decomposition products may harm health, and some serious effects may be delayed following exposure.

Ingestion: May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Skin contact: May cause skin irritation or dermatitis.

Eye contact: May cause eye irritation.

Acute Toxicity Measurements:

Product/Ingredient name	Measurement	Dose / Duration	Species	Remarks
Sodium Nitrite	LD50 Oral	157.9 mg/kg	Rat	
	LD50 Oral	175 mg/kg	Mouse	Vascular: Regional or general arteriolar or venous dilation
Polyalphaolefins	LC50 Inhalation	> 5.2 mg/L, 4 hr	Rat	
	LD50 Oral	> 5000 mg/kg	Rat	
	LC50 Inhalation	> 8.3 mg/L, 1 hr	Rat	

Amine Mixture	LD50 Dermal	2150 - 10,000 mg/kg	Rabbit	
	LD50 Oral	1470 mg/kg	Rat	

11.3 Potential chronic health effects

Skin Corrosion / Irritation: No significant irritation. (Rabbit)
Serious Eye Damage / Irritation: No significant irritation. (Rabbit)
Skin Sensitization: Not a skin sensitizer.
Respiratory Sensitization: Not a respiratory sensitizer.
Aspiration Hazard: Not an aspiration hazard. This product is not normally respirable.
Germ Cell Mutagenicity: Does not show mutagenic effects.
Reproductive / Developmental Effects: Does not show reproductive or developmental effects.
Carcinogenicity: Not classifiable as a human carcinogen, according to current guidelines.

Specific organ toxicity - Single exposure: No evidence of specific organ toxicity.
Specific organ toxicity - Repeat exposure: No evidence of specific organ toxicity.

11.4 Toxicokinetics, metabolism and distribution: No specific information is available.

11.5 Other Information: This material is a grease or lubricating fluid, and there is almost no risk of inhalation under normal conditions. However, therrmal decomposition can lead to release of toxic and corrosive gases. Exposure to decomposition products can cause severe irritation of eyes, skin and mucous membranes.

This product may contain small amounts of residual tetrafluoroethylene (TFE) monomer. TFE has been shown to cause liver and kidney cancer in laboratory animals in a test conducted by the National Toxicology Program (NTP). It is also listed by the state of California under Proposition 65 as a carcinogen.

Based on product test data from this and similar products.

12. ECOLOGICAL INFORMATION

12.1 Aquatic Ecotoxicity effects Contains sodium nitrite. Very toxic to aquatic organisms.

Product/Ingredient name	Measurement	Dose / Duration	Species	Remarks
Sodium nitrite	LC50 - Fish	0.19 mg/L, 96 hr	Oncorhynchus mykiss (Rainbow Trout)	
	EC50 - Invert.	12.5 mg/L, 48 hr	Daphnia Magna (Water Flea)	
1-Decene homopolymer hydrogenated	EL50 - Invert.	>1000mg/LWAF,48hr	Daphnia Magna (Water Flea)	
	LL50 - Fish	> 1000 mg/L, 96 hr	Fish	
	NOELR	1000mg/L WAF, 72hr	Aquatic Plants	
	NOELR	125mg/L WAF, 21 d	Daphnia Magna (Water Flea)	
	NOEC	2 mg/L, 28 d	Activated sludge	

12.2 Persistence and degradability Not biodegradable.

12.3 Bioaccumulative Potential Low. Not soluble in water.

Product/Ingredient name	Log(P_{ow})	BCF	Potential

12.4 Mobility in Soil

Soil/water partition coefficient (KOC): Not available

Mobility: This product is not likely to move rapidly with surface or groundwater flows because of its low water solubility and high density. This product is not likely to volatilize rapidly into the air because of its low vapor pressure.

12.5 Results of PBT and vPvB assessment: Not data available.
Germany water class (WGK): Class 1 - Slightly hazardous to water (German VwVwS legislation, May 1999)

12.6 Other Information: Ecological injuries are not known or expected under normal use.

13. DISPOSAL CONSIDERATIONS

The information in this section contains generic advice and guidance. Specific situations may require additional actions.

13.1 Waste treatment methods / Waste from residues & unused products:

Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all national, state/provincial and local laws and regulations. Regulations may vary in different locations.

Waste characterizations and compliance with applicable laws and regulations are the responsiblity of the waste generator. 'Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

13.2 Contaminated Packaging:

Empty and clean contaminated packaging as much as as possible. Do not burn or use a cutting torch on the empty drum.
Empty containers can be taken to an approved waste handling site or landfilled, when in accordance with the local regulations.
Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

13.2 RCRA Hazardous Waste (40 CFR 302): No

Disposal should be in accordance with applicable local, regional, national and international laws and regulations.

14. TRANSPORT INFORMATION

14.1 International transport regulations

US DOT Class (Ground)	No special transport requirements.
TDG Class (Canada)	No special transport requirements.
ADR / RID Class (EU Road / Rail)	No special transport requirements.
IMO / IMDG Class (Sea)	No special transport requirements.
ICAO / IATA Class (Air)	No special transport requirements.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture

United States:	29 CFR 1910.1200 (HCS 2012, USGHS) as amended.
European Union:	Regulation (EC) No 1272/2008 (EU CLP) as amended.
	Regulation (EC) No 1907/2006 (EU REACH) as amended.
	Directive 98/24/EC (Worker Health & Safety Regulations) as amended.
	European Waste Catalogue (Note: Waste codes should be assigned by the user based on the application)

15.2 International Inventory Lists:

Australia Inventory (AICS):	Other than exceptions listed below, all ingredients listed, exempt or notified.
Canada Inventory (DSL/NDSL):	Other than exceptions listed below, all ingredients listed, exempt or notified.
China Inventory (IECSC):	Other than exceptions listed below, all ingredients listed or exempt.
European Inventory (EINECS):	Other than exceptions listed below, all ingredients listed, exempt or notified. (ELINCS)
Korea Invetory (KECI):	Other than exceptions listed below, all ingredients listed, exempt or notified.
Japan Inventory (ENCS/ISHL):	Other than exceptions listed below, all ingredients listed, exempt or notified.
New Zealand Inventory (NZIoC):	Other than exceptions listed below, all ingredients listed, exempt or notified.
Philippines Inventory (PICCS):	Other than exceptions listed below, all ingredients listed, exempt or notified.
United States Inventory (TSCA 8b):	Other than exceptions listed below, all ingredients listed, exempt or notified.

15.3 European Regulations:

REACH SVHC List, (EC) 1907/2006:	This product does NOT contain REACH Substances of Very High Concern (17 Dec 2014 SVHC list).
Major Accident Hazard Legislation:	Directive 96/82/EC Update: 2003 does not apply.
Water contaminating class (Germany):	WGK 1 Slightly hazardous to waters

15.4 North American Regulations:

United States inventory (TSCA 8b):	**Hazardous:** Sodium Nitrite (CAS # 7632-00-0)
CERCLA Hazardous substances:	No components are regulated.
US export notification (TSCA 12b):	Sodium Nitrite (CAS # 7632-00-0) ; See also 40 CFR 721.4740

Clean Air Act (CAA) 112

Accidental release prevention:	No components were found.
Regulated flammable substances:	No components were found.
Regulated toxic substances:	No components were found.
Hazardous air pollutants (HAPs):	Not listed.

SARA 302/304/311/312

302 Extremely hazardous substances:	None
311 / 312 Emergency planning and notification:	**Hazardous chemical:** Sodium Nitrite (CAS # 7632-00-0) , 1-5% **Hazard Types:** Acute Health Hazard, Chronic Health Hazards

SARA 313 Form R Reporting Requirements:

Component Name	CAS Number	wt. %
Sodium Nitrite	7632-00-0	1-5%

Components on US State Right-to-Know Disclosure Lists: Any components on State "Right-to-Know" disclosure lists are listed below.

Polytetrafluoroethylene (CAS # 9002-84-0):	On "Right-to-Know" disclosure list for Pennsylvania
Sodium Nitrite (CAS # 7632-00-0):	On "Right-to-Know" disclosure lists for Massachusetts, New Jersey, Pennsylvania.

California Proposition 65 Any components known by the State of California to cause cancer, birth defects, or reproductive harm are listed below.

15.5 Chemical Safety Assessment: Chemical safety assessments are not required for this substance.

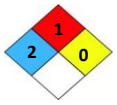
16. OTHER INFORMATION

Hazardous Material Information System (USA)

Health	2
Flammability	1
Physical Hazards	0
Personal Protection	B

National Fire Protection Association (USA)

Health	2
Flammability	1
Instability	0
Special	



The information provided in this Safety Data Sheet is correct to the best of the supplier's knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty or quality specification. The information relates only to the specific product designated and may not be valid for such product when used in combination with any other material or in any process, unless specified in this SDS. Aerospace Lubricants, Inc. specifically disclaims any liability for any loss, injury or damage which may result from use or misuse of this product.

All chemicals should be handled only by competent personnel, within a controlled environment. It is the buyer's/user's responsibility to ensure that his activities comply with all applicable federal, state, provincial and local laws, and to determine the conditions necessary for the safe use of this product. Aerospace Lubricants, Inc. urges each customer or recipient of this SDS to study it carefully and consult appropriate experts to become aware of and understand the data contained in this SDS and any hazards associated with the product.