



CHEMICAL PRODUCT SAFETY DATA SHEET

Prepared in accordance with GB/T 16483 and GB/T 17519.

Product name: Dry Moly Lube

Issue date: 03-16-2016
Revision date: 12-14-2017
Version #: 03
SDS No: -

SECTION 1 Chemical product and company identification

Product name	Dry Moly Lube
Product Code	No. PR03084 (Item# 1007694)
Manufactured or sold by:	
Company name	CRC Industries Trading (Shanghai) Co., Ltd.
Address	Room 1710, No. 488 South Wuning Road Jingan District - 200042 Shanghai, PR China
General Information	+86 21 6236 6035
24-Hour Emergency	+86 532 83889090
Website	www.crcindustries.cn

Recommended use and Limitations on use

Recommended use	Dry film lubricant
Issue date	03-16-2016
Revision date	12-14-2017
Supersedes date	04-06-2016

SECTION 2 Hazards identification

Emergency overview	Aerosol. CONTENTS UNDER PRESSURE. Pressurized container may rupture when exposed to heat or flame. May be fatal if swallowed and enters airways. May cause damage to organs through prolonged or repeated exposure. May cause drowsiness and dizziness. Causes serious eye irritation. Causes mild skin irritation. May cause irritation to the respiratory system. Possible reproductive hazard. Dangerous for the environment if discharged into watercourses.
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Hazard categories

Physical hazards	Aerosols	Category 1
Health hazards	Skin corrosion/irritation	Category 3
	Serious eye damage/eye irritation	Category 2
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3

Label elements

Pictograms



Signal word Danger

Hazard statement

H222	Extremely flammable aerosol.
H229	Pressurized container: May burst if heated.

H304	May be fatal if swallowed and enters airways.
H316	Causes mild skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement**Prevention**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe mist or vapor.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P273	Avoid release to the environment.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Physical and chemical hazards

Extremely flammable aerosol. The product is stable and non-reactive under normal conditions of use, storage and transport.

Health hazards

Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Prolonged inhalation may be harmful. Causes mild skin irritation. Causes serious eye irritation.

Environmental hazards

Harmful to aquatic life with long lasting effects.

Supplemental information

None.

SECTION 3 Composition/information on ingredients

Substance/mixture	Mixture		
Chemical name		Concentration (%)	CAS Number
acetone		30 - 40	67-64-1
isopropyl alcohol		20 - 30	67-63-0
heptane, branched, cyclic and linear		3 - 5	426260-76-6
n-heptane		1 - 3	142-82-5
solvent naphtha (petroleum), medium aliph.		1 - 3	64742-88-7
toluene		< 0.3	108-88-3

SECTION 4 First aid measures**Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms and health effects	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Mild skin irritation. Prolonged exposure may cause chronic effects.
Personal protection for first-aid responders	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.
Notes to physician	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5 Fire-fighting measures

Extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO ₂).
Extinguishing media to avoid	None known.
Specific hazards	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
Protection of fire-fighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
General fire hazards	Extremely flammable aerosol.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire and/or explosion do not breathe fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Clean-up methods and materials and containment measures Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Prevention of secondary hazards Not available.

SECTION 7 Handling and storage

Handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not breathe mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Storage Level 3 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source.

SECTION 8 Exposure controls/personal protection

Exposure limits

China OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2007)

Components	Type	Value
acetone (CAS 67-64-1)	PC-STEL	450 mg/m3
	PC-TWA	300 mg/m3
isopropyl alcohol (CAS 67-63-0)	PC-STEL	700 mg/m3
	PC-TWA	350 mg/m3
n-heptane (CAS 142-82-5)	PC-STEL	1000 mg/m3
	PC-TWA	500 mg/m3
toluene (CAS 108-88-3)	PC-STEL	100 mg/m3
	PC-TWA	50 mg/m3

Biological limit values

China. Biological limit values for occupational exposure (WS/T 110 to 115, 239 to 243, and 264 to 267)

Components	Value	Determinant	Specimen	Sampling Time
toluene (CAS 108-88-3)	1.5 g/g	Hippuric acid	Creatinine in urine	*
	2 g/l	Hippuric acid	Urine	*
	5 mg/m3	toluene		*
	20 mg/m3		End-exhaled air	*
	11 mmol/l	Hippuric acid	Urine	*
	1 mol/mol	Hippuric acid	Creatinine in urine	*

* - For sampling details, please see the source document.

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	*
isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines

China OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2007): Skin designation

TOLUENE (CAS 108-88-3)

Can be absorbed through the skin.

Monitoring methods

Follow standard monitoring procedures.

Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Personal protective equipment

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Hand protection

Wear protective gloves such as: Nitrile. Neoprene.

Eye protection

Wear safety glasses with side shields (or goggles).

Skin and body protection	Wear suitable protective clothing.
Hygiene measures	Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9 Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Aerosol.
Color	Gray.
Odor	Solvent.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point, initial boiling point, and boiling range	Not available.
Flash point	-20.2 °F (-29 °C) Pensky-Martens Closed Cup
Flammability limit - lower (%)	1 %
Flammability limit - upper (%)	12.8 %
Explosive limit - lower (%)	1 %
Explosive limit - upper (%)	12.8 %
Vapor pressure	13.5 kPa
Vapor density	1.55 (air = 1)
Relative density	0.71
Density	5.93 lbs/gal
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Evaporation rate	Fast.
Flammability (solid, gas)	Not available.
Other data	
Percent volatile	96.8 % estimated

SECTION 10 Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Nitrates. Isocyanates. Fluorine. Chlorine.
Hazardous decomposition products	Carbon oxides. Sulfur oxides. Metal oxides.

SECTION 11 Toxicological information

Acute toxicity May be fatal if swallowed and enters airways.

Components	Species	Test Results
acetone (CAS 67-64-1)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	20000 mg/kg
Oral		
LD50	Rat	5800 mg/kg

Components	Species	Test Results
heptane, branched, cyclic and linear (CAS 426260-76-6)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 60 mg/l, 4 hours
Oral		
LD50	Rat	> 5000 mg/kg
isopropyl alcohol (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	5030 - 7900 mg/kg
Inhalation		
LC50	Rat	16000 ppm, 4 hours
Oral		
LD50	Rat	4700 - 5800 mg/kg
n-heptane (CAS 142-82-5)		
Acute		
Dermal		
LD50	Rabbit	3000 mg/kg
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.	
Symptoms	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Mild skin irritation.	
Skin corrosion/irritation	Causes mild skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitizer	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity		
IARC Monographs. Overall Evaluation of Carcinogenicity		
toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.	
Toxic to reproduction	Suspected of damaging the unborn child.	
Specific target organ toxicity following single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.	
Specific target organ toxicity following repeated exposure	May cause damage to organs through prolonged or repeated exposure.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.	

SECTION 12 Ecological information

Ecotoxicological data

Components	Species	Test Results
acetone (CAS 67-64-1)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
		10294 - 17704 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)
		4740 - 6330 mg/l, 96 hours

Components	Species	Test Results
heptane, branched, cyclic and linear (CAS 426260-76-6)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (Daphnia magna) 1.5 mg/l, 48 hours
isopropyl alcohol (CAS 67-63-0)		
Aquatic		
Fish	LC50	Bluegill (Lepomis macrochirus) > 1400 mg/l, 96 hours
n-heptane (CAS 142-82-5)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (Daphnia magna) 1.5 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas) 2.1 - 2.98 mg/l, 96 hours
solvent naphtha (petroleum), medium aliph. (CAS 64742-88-7)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia pulex) 2.7 - 5.1 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss) 8.8 mg/l, 96 hours
		8.8 mg/l, 96 hours
toluene (CAS 108-88-3)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (Daphnia magna) 6 mg/l, 48 hours
Fish	LC50	Coho salmon, silver salmon (Oncorhynchus kisutch) 5.5 mg/l, 96 hours
Ecotoxicity	Harmful to aquatic life with long lasting effects.	
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.	
Bioaccumulation		
Bioaccumulative potential		
Bioconcentration factor		
toluene		90
Octanol/water partition coefficient log Kow		
acetone		-0.24
isopropyl alcohol		0.05
n-heptane		4.66
toluene		2.73
Mobility in soil	No data available for this product.	
Other hazardous effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

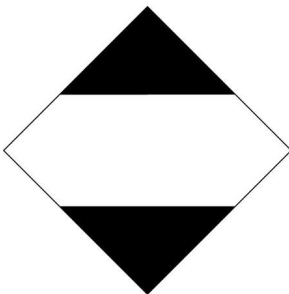
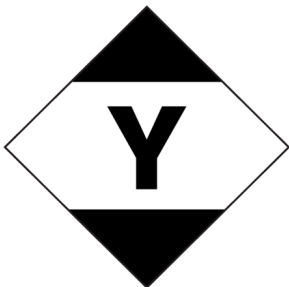
SECTION 13 Disposal considerations

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
Local disposal regulations	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14 Transport information

CNDG

UN number	UN1950
UN proper shipping name	AEROSOLS, Limited Quantity

Transport hazard class(es)**Class** 2**Subsidiary risk** -**Packing group** -**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**IATA****UN number** UN1950**UN proper shipping name** Aerosols, flammable, Limited Quantity**Transport hazard class(es)****Class** 2.1**Subsidiary risk** -**Packing group** Not available.**Environmental hazards** No.**ERG Code** 10L**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Other information****Passenger and cargo aircraft** Allowed with restrictions.**Cargo aircraft only** Allowed with restrictions.**IMDG****UN number** UN1950**UN proper shipping name** AEROSOLS, Limited Quantity**Transport hazard class(es)****Class** 2**Subsidiary risk** -**Packing group** Not available.**Environmental hazards****Marine pollutant** No.**EmS** Not available.**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.**CNDG; IMDG****IATA**

SECTION 15 Regulatory information**Inventory of Existing Chemical Substances in China**

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Applicable regulations

This safety data sheet conforms to the following laws, regulations and standards:
Regulations on the Control over Safety of Dangerous Chemicals
Regulations on Labor Protection in Workplaces Where Toxic Products Are Used
Measures for the Safe Use of Chemicals in Workplaces
Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T 16483-2008)
General Rules for Preparation of Precautionary Labels for Chemicals (GB15258-2009)
Packing Symbol of Dangerous Goods(GB190-2009)
Packing - Pictorial Marking for Handling of Goods (GB/T191-2009)

General Rule For Classification and Hazard Communication of Chemicals (GB 13690-2009) and Catalog of Hazardous Chemicals

acetone (CAS 67-64-1)
isopropyl alcohol (CAS 67-63-0)
n-heptane (CAS 142-82-5)
solvent naphtha (petroleum), medium aliph. (CAS 64742-88-7)
toluene (CAS 108-88-3)

Occupational exposure limits for hazardous agents in the workplace (GBZ 2.1-2007)

acetone (CAS 67-64-1)
isopropyl alcohol (CAS 67-63-0)
n-heptane (CAS 142-82-5)
toluene (CAS 108-88-3)

National Catalogue of Hazardous Wastes

acetone (CAS 67-64-1)

Restricted Import/Export Toxic Chemical List (MEP and GCA Announcement No. 2008-66, Dec. 1, 2008, amended through MEP and Customs Notice No. 2013-85, December 30, 2013)

Not regulated.

Identification of Major Hazard Installations for Hazardous Chemicals (GB18218-2009)

acetone (CAS 67-64-1)
toluene (CAS 108-88-3)

List Of Priority Management of Hazardous Chemicals

solvent naphtha (petroleum), medium aliph. (CAS 64742-88-7)
toluene (CAS 108-88-3)

Classification and code of dangerous goods (GB 6944-2012)

Regulated.

List of Dangerous Goods (GB 12268-2012)

Regulated.

The Principle of Classification of Transport Packaging Groups of Dangerous Goods (GB/T15098-2008)

Regulated.

General Specifications for Transport Packages of Dangerous Goods (GB 12463-2009)

Regulated.

Regulations on Road Transport of Dangerous Goods

Regulated.

Regulations on Rail Road Transport of Dangerous Goods

Regulated.

UN Recommendations on the Transport of Dangerous Goods (UN RTDG)

Regulated.

SECTION 16 Other information**References**

EPA: AQUIRE database
GB6944-2012: Classification and Code of Dangerous Goods.
GB12268-2012: List of Dangerous Goods.
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer

CRC Industries Trading (Shanghai) Co., Ltd. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.