

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** C3322
Product Name: Dry Moly Lubricant
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- | | | |
|--------------------------|---|---------------------------------------|
| Company Name: | CYCLO INDUSTRIES, INC.
902 SOUTH US HIGHWAY 1
JUPITER, FL 33477 | Phone Number:
(800)843-7813 |
| Web site address: | www.cyclo.com | |
| Information: | First Aid Emergency (Outside U.S.) | (312)906-6194 |
- 1.4 Emergency telephone number:**
- | | | |
|---------------------------|--|--------------------------------|
| Emergency Contact: | First Aid Emergency
CHEMTREC (703) 527-3887 | (800)752-7869
(800)424-9300 |
|---------------------------|--|--------------------------------|

Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**
Flammable Liquids, Category 1
Serious Eye Damage/Eye Irritation, Category 2A
Target Organ Systemic Toxicity (single exposure), Category 3
Respiratory Sensitization, Category 1B
- 2.1.2 Classification according to Directive 1999/45/EC:**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

**GHS Signal Word:** Danger**GHS Hazard Phrases:**

H224: Extremely flammable liquid and vapor.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H340: May cause genetic defects. H335: May cause respiratory irritation.
H350: May cause cancer.
H361: Suspected of damaging fertility or the unborn child.
H336: May cause drowsiness or dizziness.
H373: May cause damage to organs through prolonged or repeated exposure.
H304: May be fatal if swallowed and enters airways.
H280: Contents under pressure. May explode if heated.

GHS Precaution Phrases:

P233: Keep container tightly closed.
P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P243: Take precautionary measures against static discharge.
P242: Use only non-sparking tools.
P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.
 P260: Do not breathe dust/fume/gas/mist/vapours/spray.

GHS Response Phrases:

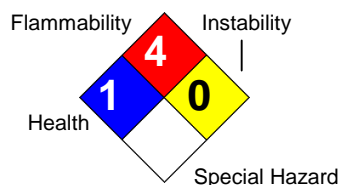
P370+378: In case of fire, use foam, CO₂, dry chemical or water fog to extinguish.
 P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P331: Do NOT induce vomiting.
 P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
 P332+313: If skin irritation occurs, get medical advice/attention.
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+313: If eye irritation persists, get medical advice/attention.
 P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

GHS Storage and Disposal Phrases:

P501: Dispose of contents/container in accordance with local/regional/national/international regulation.
 P405: Store locked up.
 P403+233: Store container tightly closed in well-ventilated place.

2.2.2 Labeling according to Directive 1999/45/EC:

Hazard Rating System:



2.3 Adverse Human Health Effects and Symptoms:

Section 3. Composition/Information on Ingredients

Section 3. Composition/Information on Ingredients				
CAS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	Risk Phrases/ GHS Classification
67-64-1	Acetone	35.0 -45.0 %	200-662-2 606-001-00-8	F; Xi; R11-36-66-67 Flam. Liq. 2: H225 Eye Damage 2A: H319 TOST (SE) 3: H335 H336
78-93-3	Methyl ethyl ketone	25.0 -35.0 %	201-159-0 606-002-00-3	F; Xi; R11-36-66-67 Flam. Liq. 2: H225 Eye Damage 2A: H319 TOST (SE) 3: H335 H336
74-98-6	Propane	5.0 -10.0 %	200-827-9 601-003-00-5	F+; R12 Comp. Gas: H280 Flam. Gas 1: H220
106-97-8	Butane	5.0 -10.0 %	203-448-7 601-004-01-8	F+; T; R45-46-12 Flam. Gas 1: H220 Comp. Gas: H280
67-63-0	Isopropyl alcohol	1.0 -10.0 %	200-661-7 603-117-00-0	F; Xi; R11-36-67 Flam. Liq. 2: H225 Eye Damage 2A: H319 TOST (SE) 3: H335 H336



Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:** If swallowed, do not induce vomiting. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of skin contact, wash with soap and large amounts of water. Remove contaminated clothing. Wash contaminated clothing before reuse. Call physician immediately if adverse reaction occurs.

Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Foam, CO₂, dry chemical, water fog.
- 5.2 Flammable Properties and Hazards:** Closed containers may explode from internal pressure build-up when exposed to extreme heat and discharge contents. Vapor accumulation can flash or explode if ignited. Overexposure to decomposition products may cause a health hazard. Symptoms may not be readily apparent. Obtain medical attention.
- Flash Pt:** -156.00 F (-104.4 C) Method Used: Estimate
- Explosive Limits:** LEL: 1.8 UEL: 13
- Autoignition Pt:** No data.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Keep containers and surroundings cool with water spray.

Section 6. Accidental Release Measures

- 6.3 Methods and Material For Containment and Cleaning Up:** Avoid breathing vapors. Ventilate area. Remove all sources of ignition. Clean up area with absorbent material & place in closed containers for disposal.

Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Wash thoroughly after handling. Ensure all equipment is electrically grounded before beginning transfer operations. Use only in well ventilated area. Keep out of the reach of children.
- 7.2 Precautions To Be Taken in Storing:** Store & use in cool, dry, well ventilated areas. Vapors may cause flash fire. Keep away from heat, sparks & flame.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
67-64-1	Acetone	TWA: 1210 mg/m ³ (500 ppm) STEL: 3620 mg/m ³ (1500 ppm)	TWA: 1210 mg/m ³ (500 ppm) STEL: 2420 mg/m ³ (1000 ppm)	TWA: 1210 mg/m ³
78-93-3	Methyl ethyl ketone	TWA: 600 mg/m ³ (200 ppm) STEL: 899 mg/m ³ (300 ppm)	TWA: 600 mg/m ³ (200 ppm) STEL: 900 mg/m ³ (300 ppm)	TWA: 600 mg/m ³ STEL: 900 mg/m ³
74-98-6	Propane	No data.	No data.	No data.
106-97-8	Butane	TWA: 1450 mg/m ³ (600 ppm) STEL: 1810 mg/m ³ (750 ppm)	TWA: 1900 mg/m ³ (800 ppm)	No data.
67-63-0	Isopropyl alcohol	TWA: 999 mg/m ³ (400 ppm) STEL: 1250 mg/m ³ (500 ppm)	STEL: 980 mg/m ³ (400 ppm)	No data.



SAFETY DATA SHEET

Dry Moly Lubricant

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
67-64-1	Acetone	PEL: 1000 ppm	TLV: 500 ppm STEL: 750 ppm	No data.
78-93-3	Methyl ethyl ketone	PEL: 200 ppm	TLV: 200 ppm STEL: 300 ppm	No data.
74-98-6	Propane	PEL: 1000 ppm	TLV: (2500 ppm)	No data.
106-97-8	Butane	No data.	TLV: (800 ppm)	No data.
67-63-0	Isopropyl alcohol	PEL: 400 ppm	TLV: 200 ppm STEL: 400 ppm	No data.

8.2 Exposure Controls:

8.2.1 Engineering Controls (Ventilation etc.): Sufficient to prevent inhalation of solvent vapors. General dilution and/or local exhaust ventilation in volume or pattern to keep PEL/TLV of most hazardous ingredient below acceptable limit and LEL below stated limit.

8.2.2 Personal protection equipment:

Eye Protection: Use of safety glasses with splash guards or full face shield is recommended.

Protective Gloves: Solvent resistant gloves required for prolonged or repeated contact.

Other Protective Clothing: Use of solvent resistant aprons or other clothing is recommended.

Respiratory Equipment (Specify Type): Avoid breathing vapors. Use with adequate ventilation equal to out of doors. In restricted areas, use approved chemical/mechanical filters designed to remove a combination of particles and vapor. In confined areas, use approved air line type respirator or hood. Self-contained breathing apparatus is required for vapor concentrations above PEL/TLV limits.

Work/Hygienic/Maintenance Practices: Eye washes and safety showers in the workplace are recommended.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid

Appearance and Odor: Aerosol product.

Melting Point: No data.

Boiling Point: -44.00 F (-42.2 C) - 177.00 F (80.6 C)

Flash Pt: -156.00 F (-104.4 C) Method Used: Estimate

Evaporation Rate: No data.

Explosive Limits: LEL: 1.8 UEL: 13

Vapor Pressure (vs. Air or mm Hg): No data.

Vapor Density (vs. Air = 1): > air

Specific Gravity (Water = 1): .73

Solubility in Water: NIL

Autoignition Pt: No data.



9.2 Other Information

Percent Volatile: 97.3 % by weight.

Section 10. Stability and Reactivity

- 10.1 Reactivity:** No data available.
- 10.2 Stability:** Unstable [] Stable [X]
- 10.3 Conditions To Avoid - Hazardous Reactions:** No data available.
- Possibility of Hazardous Reactions:** Will occur [] Will not occur [X]
- 10.4 Conditions To Avoid - Instability:** Application to hot surfaces. Storage above 120 degrees F. Exposure to open flame.
- 10.5 Incompatibility - Materials To Avoid:** Strong oxidizing agents.
- 10.6 Hazardous Decomposition Or Byproducts:** May produce fumes when heated to decomposition. Fumes may contain carbon monoxide & other toxic fumes.

Section 11. Toxicological Information

- 11.1 Information on Toxicological Effects:** No data available.

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
67-64-1	Acetone	n.a.	n.a.	A4	n.a.
78-93-3	Methyl ethyl ketone	n.a.	n.a.	n.a.	n.a.
74-98-6	Propane	n.a.	n.a.	n.a.	n.a.
106-97-8	Butane	n.a.	n.a.	n.a.	n.a.
67-63-0	Isopropyl alcohol	n.a.	3	A4	n.a.

Section 12. Ecological Information

- 12.1 Toxicity:**
 - CAS# 67-63-0:
 - LC50, Fathead Minnow (Pimephales promelas), juvenile(s), 11830000. UG/L, 1 H, Mortality, Water temperature: 18.00 C (64.4 F) - 22.00 C (71.6 F) C.
 - Results:
 - No observed effect.
 - Acute Toxicity of Selected Organic Compounds to Fathead Minnows, Mattson, V.R., J.W. Arthur, and C.T. Walbridge, 1976

 - LC50, Fathead Minnow (Pimephales promelas), juvenile(s), 11160000. UG/L, 24 H, Mortality, Water temperature: 18.00 C (64.4 F) - 22.00 C (71.6 F) C.
 - Results:
 - No observed effect.
 - Acute Toxicity of Selected Organic Compounds to Fathead Minnows, Mattson, V.R., J.W. Arthur, and C.T. Walbridge, 1976

 - LC50, Fathead Minnow (Pimephales promelas), juvenile(s), 11130000. UG/L, 48 H, Mortality, Water temperature: 18.00 C (64.4 F) - 22.00 C (71.6 F) C.
 - Results:
 - Age Effects.
 - Acute Toxicity of Selected Organic Compounds to Fathead Minnows, Mattson, V.R., J.W. Arthur, and C.T. Walbridge, 1976



LC50, Fathead Minnow (*Pimephales promelas*), juvenile(s), 11130000. UG/L, 72 H, Mortality, Water temperature: 18.00 C (64.4 F) - 22.00 C (71.6 F) C.

Results:

Age Effects.

- Acute Toxicity of Selected Organic Compounds to Fathead Minnows, Mattson, V.R., J.W. Arthur, and C.T. Walbridge, 1976

LC50, Fathead Minnow (*Pimephales promelas*), juvenile(s), 11130000. UG/L, 96 H, Mortality, Water temperature: 18.00 C (64.4 F) - 22.00 C (71.6 F) C.

Results:

Age Effects.

- Acute Toxicity of Selected Organic Compounds to Fathead Minnows, Mattson, V.R., J.W. Arthur, and C.T. Walbridge, 1976

LC50, Fathead Minnow (*Pimephales promelas*), 10400000. UG/L, 96 H, Mortality, Water temperature: 24.60 C (76.3 F) C, pH: 7.10, Hardness: 52.50 MG/L.

Results:

Affected fish lost equilibrium prior to death.

- Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 1, Brooke, L.T., D.J. Call, D.L. Geiger, and C.E. Northcott, 1984

LC50, Fathead Minnow (*Pimephales promelas*), 6550000. UG/L, 96 H, Mortality, Water temperature: 24.60 C (76.3 F) C, pH: 7.90, Hardness: 44.00 MG/L.

Results:

Affected fish lost equilibrium prior to death.

- Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 1, Brooke, L.T., D.J. Call, D.L. Geiger, and C.E. Northcott, 1984

LC50, Fathead Minnow (*Pimephales promelas*), 9640000. UG/L, 96 H, Mortality, Water temperature: 24.40 C (75.9 F) C, pH: 7.80, Hardness: 48.30 MG/L.

Results:

Affected fish lost equilibrium prior to death.

- Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 1, Brooke, L.T., D.J. Call, D.L. Geiger, and C.E. Northcott, 1984

LC50, Fathead Minnow (*Pimephales promelas*), 10600000. UG/L, 24 H, Mortality, Water temperature: 24.00 C (75.2 F) - 25.30 C (77.5 F) C, pH: 7.20, Hardness: 52.70 MG/L.

Results:

No observed effect.

- Estimates of "No Effect" Concentrations of Selected Pesticides in Freshwater Organisms, Call, D.J., L.T. Brooke, and N. Ahmad, 1981

LC50, Fathead Minnow (*Pimephales promelas*), 10400000. UG/L, 48 H, Mortality, Water temperature: 24.00 C (75.2 F) - 25.30 C (77.5 F) C, pH: 7.20, Hardness: 52.70 MG/L.

Results:

No observed effect.

- Estimates of "No Effect" Concentrations of Selected Pesticides in Freshwater Organisms, Call, D.J., L.T. Brooke, and N. Ahmad, 1981

Effective concentration to 50% of test organisms., Fathead Minnow (*Pimephales promelas*), 9380000. UG/L, 24 H, Behavior, Water temperature: 24.00 C (75.2 F) - 25.30 C (77.5 F) C, pH: 7.20, Hardness: 52.70 MG/L.



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 7

Revision: 03/18/2014
Supersedes Revision: 12/13/2013

Results:

No observed effect.

- Estimates of "No Effect" Concentrations of Selected Pesticides in Freshwater Organisms, Call, D.J., L.T. Brooke, and N. Ahmad, 1981

Effective concentration to 50% of test organisms., Fathead Minnow (*Pimephales promelas*), 10000000. UG/L, 48 H, Behavior, Water temperature: 24.00 C (75.2 F) - 25.30 C (77.5 F) C, pH: 7.20, Hardness: 52.70 MG/L.

Results:

No observed effect.

- Estimates of "No Effect" Concentrations of Selected Pesticides in Freshwater Organisms, Call, D.J., L.T. Brooke, and N. Ahmad, 1981

LC50, Bluegill (*Lepomis macrochirus*), 1400000. UG/L, 24 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

LC50, Bluegill (*Lepomis macrochirus*), 1400000. UG/L, 48 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

LC50, Bluegill (*Lepomis macrochirus*), 1400000. UG/L, 72 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

LC50, Bluegill (*Lepomis macrochirus*), 1400000. UG/L, 96 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

Lethal concentration to 0% of test organisms., Bluegill (*Lepomis macrochirus*), fingerling, 10000000. UG/L, 96 H, Mortality, Water temperature: 19.50 C (67.1 F) - 20.50 C (68.9 F) C.

Results:

No observed effect.

- Behavior of Organic Chemicals in the Aquatic Environment. Part II. - Behavior in Dilute Systems, Buzzell, J.C., Jr., R.H.F. Young, and D.W. Ryckman, 1968

Not reported., Rainbow Trout (*Oncorhynchus mykiss*), 4800000. UG/L, 2 - 24 H, Accumulation.

Results:

No observed effect.



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 8

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

- Estimates of "No Effect" Concentrations of Selected Pesticides in Freshwater Organisms, Call, D.J., L.T. Brooke, and N. Ahmad, 1981

Effective concentration to 50% of test organisms., Water Flea (Daphnia magna), 159000. UMOL/L, 24 H, Intoxication,.

Results:

No observed effect.

- Comparative Acute Toxicity of the First 50 Multicentre Evaluation of In Vitro Cytotoxicity Chemicals to Aquatic Non-vertebrates, Calleja, M.C., G. Persoone, and P. Geladi, 1994

Effective concentration to 50% of test organisms., Water Flea (Daphnia magna), neonate, 114.0 MMOL/L, 24 H, Intoxication,, Water temperature: 21.00 C (69.8 F) C, pH: 7.60.

Results:

No observed effect.

- A Comparison of the Toxicity of 50 Reference Chemicals to Freshly Isolated Rainbow Trout Hepatocytes and Daphnia magna, Lilius, H., B. Isomaa, and T. Holmstrom, 1994

LC50, Water Flea (Daphnia magna), 10000. MG/L, 24 H, Intoxication,, Water temperature: 20.00 C (68.0 F) - 22.00 C (71.6 F) C, pH: 7.70, Hardness: 16.00 dH.

Results:

No observed effect.

- Results of the Damaging Effect of Water Pollutants on Daphnia magna (Befunde der Schadwirkung Wassergefahrdender Stoffe Gegen Daphnia magna), Bringmann, G., and R. Kuhn, 1977

Lethal concentration to 0% of test organisms., Water Flea (Daphnia magna), 5000. MG/L, 24 H, Intoxication,, Water temperature: 20.00 C (68.0 F) - 22.00 C (71.6 F) C, pH: 7.70, Hardness: 16.00 dH.

Results:

No observed effect.

- Results of the Damaging Effect of Water Pollutants on Daphnia magna (Befunde der Schadwirkung Wassergefahrdender Stoffe Gegen Daphnia magna), Bringmann, G., and R. Kuhn, 1977

Effective concentration to 0% of test organisms., Water Flea (Daphnia magna), 5102. MG/L, 24 H, Behavior, pH: =8.00.

Results:

No observed effect.

- Results of Toxic Action of Water Pollutants on Daphnia magna Straus Tested by an Improved Standardized Procedure, Bringmann, G., and R. Kuehn, 1982

Effective concentration to 50% of test organisms., Water Flea (Daphnia magna), 9714. MG/L, 24 H, Behavior, pH: =8.00.

Results:

No observed effect.

- Results of Toxic Action of Water Pollutants on Daphnia magna Straus Tested by an Improved Standardized Procedure, Bringmann, G., and R. Kuehn, 1982

Effective concentration to 100% of test organisms., Water Flea (Daphnia magna), 10000. MG/L, 24 H, Behavior, pH: =8.00.

Results:

No observed effect.



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 9

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

- Results of Toxic Action of Water Pollutants on Daphnia magna Straus Tested by an Improved Standardized Procedure, Bringmann, G., and R. Kuehn, 1982

Effective concentration to 50% of test organisms., Water Flea (Daphnia pulex), 174.27 MMOL/L, 24 H, Intoxication., Water temperature: 20.00 C (68.0 F) C, pH: 7.60.

Results:

No observed effect.

- A Comparison of the Toxicity of 30 Reference Chemicals to Daphnia magna and Daphnia pulex, Lilius, H., T. Hastbacka, and B. Isomaa, 1995

LC50, Common Shrimp, Sand Shrimp (Crangon crangon), 1400000. UG/L, 48 H, Mortality.

Results:

No observed effect.

- Toxicity of Oil-Sinking Agents, Blackman, R.A.A., 1974

LC50, Common Shrimp, Sand Shrimp (Crangon crangon), 1150000. UG/L, 96 H, Mortality.

Results:

No observed effect.

- Toxicity of Oil-Sinking Agents, Blackman, R.A.A., 1974

LC50, Harlequinfish, Red Rasbora (Rasbora heteromorpha), 7100000. UG/L, 24 H, Mortality, Water temperature: 20.00 C (68.0 F) C, pH: 8.10, Hardness: 20.00 MG/L.

Results:

Affected fish swam at or near surface.

Affected fish lost equilibrium prior to death.

- Acute Toxicity of 102 Pesticides and Miscellaneous Substances to Fish, Tooby, T.E., P.A. Hursey, and J.S. Alabaster, 1975

LC50, Harlequinfish, Red Rasbora (Rasbora heteromorpha), 4900000. UG/L, 48 H, Mortality, Water temperature: 20.00 C (68.0 F) C, pH: 8.10, Hardness: 20.00 MG/L.

Results:

Affected fish lost equilibrium prior to death.

- Acute Toxicity of 102 Pesticides and Miscellaneous Substances to Fish, Tooby, T.E., P.A. Hursey, and J.S. Alabaster, 1975

LC50, Harlequinfish, Red Rasbora (Rasbora heteromorpha), 4200000. UG/L, 96 H, Mortality, Water temperature: 20.00 C (68.0 F) C, pH: 8.10, Hardness: 20.00 MG/L.

Results:

Affected fish stopped schooling behavior.

Affected fish became hyperactive.

No loss of equilibrium observed.

- Acute Toxicity of 102 Pesticides and Miscellaneous Substances to Fish, Tooby, T.E., P.A. Hursey, and J.S. Alabaster, 1975

LC50, Western Mosquitofish (Gambusia affinis), 1400000. UG/L, 24 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 10

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

LC50, Western Mosquitofish (*Gambusia affinis*), 1400000. UG/L, 48 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

LC50, Western Mosquitofish (*Gambusia affinis*), 1400000. UG/L, 72 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

LC50, Western Mosquitofish (*Gambusia affinis*), 1400000. UG/L, 96 H, Mortality, Water temperature: 22.00 C (71.6 F) C.

Results:

No observed effect.

- Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

Lethal concentration to 0% of test organisms., Creek Chub (*Semotilus atromaculatus*), 900000. UG/L, 24 H, Mortality, Water temperature: 15.00 C (59.0 F) - 21.00 C (69.8 F) C, pH: 8.30, Hardness: 98.00 MG/L.

Results:

No observed effect.

- Appraisal of a Chemical Waste Problem by Fish Toxicity Tests, Gillette, L.A., D.L. Miller, and H.E. Redman, 1952

Lethal concentration to 100% of test organisms., Creek Chub (*Semotilus atromaculatus*), 1100000. UG/L, 24 H, Mortality, Water temperature: 15.00 C (59.0 F) - 21.00 C (69.8 F) C, pH: 8.30, Hardness: 98.00 MG/L.

Results:

No observed effect.

- Appraisal of a Chemical Waste Problem by Fish Toxicity Tests, Gillette, L.A., D.L. Miller, and H.E. Redman, 1952

LC50, Goldfish (*Carassius auratus*), 5000000. UG/L, 24 H, Mortality, Water temperature: 20.00 C (68.0 F) C, pH: 7.00.

Results:

No observed effect.

- The Acute Toxicity of Some Petrochemicals to Goldfish, Bridie, A.L., C.J.M. Wolff, and M. Winter, 1979

LC50, Yellow Fever Mosquito (*Aedes aegypti*), larva(e), 3.200 % V/V, 4 H, Mortality, Water temperature: 22.00 C (71.6 F) - 24.00 C (75.2 F) C.

Results:

Age Effects.

- Relative Toxicity of Organic Solvents to *Aedes aegypti* Larvae, Kramer, V.C., D.J. Schnell, and K.W. Nickerson, 1983

Not reported., Cryptomonad (*Chilomonas paramecium*), 104000. UG/L, 48 H, Population, Water temperature: 20.00 C (68.0 F) C, pH: 6.90.



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 11

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

Results:

No observed effect.

- Determination of the Biological Effect From Water Pollutants to Protozoa. III. Saprozoic Flagellates (Bestimmung der Biologischen Schadwirkung Wassergefährdender Stoffe Gegen Protozoen III. Saprozoische Flagellaten), Bringmann, G., R. Kuhn, and A. Winter, 1980

Not reported., Cryptomonad (*Chilomonas paramecium*), 104000. UG/L, Population.

Results:

Affected fish stopped schooling behavior.

Affected fish became hyperactive.

No loss of equilibrium observed.

- Comparison of the Effect of Toxic Substances on the Flagellate Organisms Such as Ciliates and the Holozoic Bacteria-Devouring Organisms Such as Saprozoic Protozoans (Vergleich der Wirkung von Schadstoffen auf Flagellate, Bringmann, G., and R. Kuhn, 1981

Not reported., Green Algae (*Chlorella* sp.), 79000. UG/L, 11 - 20 D, Population.

Results:

No observed effect.

- Naturally Occurring Organic Compounds and Algal Growth in a Eutrophic Lake, Adams, V.D., R.R. Renk, P.A. Cowan, and D.B. Porcella, 1975

Not reported., Green Algae (*Chlamydomonas reinhardtii*), 79000. UG/L, 11 - 17 D, Population.

Results:

No observed effect.

- Naturally Occurring Organic Compounds and Algal Growth in a Eutrophic Lake, Adams, V.D., R.R. Renk, P.A. Cowan, and D.B. Porcella, 1975

LC50, Rotifer (*Brachionus plicatilis*), Post-hatch, 519000. UMOL/L, 24 H, Mortality, Water temperature: 25.00 C (77.0 F) C.

Results:

Affected fish lost equilibrium prior to death.

- Cyst-Based Toxicity Tests. IV. The Potential of Ecotoxicological Tests for the Prediction of Acute Toxicity in Man as Evaluated on the First Ten Chemicals of the MEIC Programme, Calleja, M.C., and G. Persoone, 1992

LC50, Brine Shrimp (*Artemia salina*), nauplii, 10000000. UG/L, 24 H, Mortality, Water temperature: 24.00 C (75.2 F) C.

Results:

No observed effect.

- Brine Shrimp Bioassay and Seawater BOD of Petrochemicals, Price, K.S., G.T. Waggy, and R.A. Conway, 1974

LC50, Brine Shrimp (*Artemia salina*), 278000. UMOL/L, 24 H, Mortality.

Results:

No observed effect.

- Comparative Acute Toxicity of the First 50 Multicentre Evaluation of In Vitro Cytotoxicity Chemicals to Aquatic Non-vertebrates, Calleja, M.C., G. Persoone, and P. Geladi, 1994

LC50, Brine Shrimp (*Artemia salina*), larva(e), 278000. UMOL/L, 24 H, Mortality.

Results:



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 12

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

Affected fish lost equilibrium prior to death.

- Cyst-Based Toxicity Tests. IV. The Potential of Ecotoxicological Tests for the Prediction of Acute Toxicity in Man as Evaluated on the First Ten Chemicals of the MEIC Programme, Calleja, M.C., and G. Persoone, 1992

Not reported., Algae (Algae), 79000. UG/L, 11 - 14 D, Population.

Results:

No observed effect.

- Naturally Occurring Organic Compounds and Algal Growth in a Eutrophic Lake, Adams, V.D., R.R. Renk, P.A. Cowan, and D.B. Porcella, 1975

Inhibition concentration to 50% of test organisms, Ciliate (Tetrahymena pyriformis), 97.06 MMOL/L, 2 D, Population.

Results:

No observed effect.

- Structure-Toxicity Relationships for Unsaturated Alcohols to Tetrahymena pyriformis: C5 and C6 Analogs and Primary Propargylic Alcohols, Schultz, T.W., and M. Tichy, 1993

Not reported., Ciliate (Tetrahymena pyriformis), 1.000 M, 1 M, Intoxication,.

Results:

Age Effects.

- Computerized In Vitro Test for Chemical Toxicity Based on Tetrahymena Swimming Patterns, Noever, D.A., H.C. Matsos, R.J. Cronise, L.L. Looger, R.A. Relwani, and J.U. Johnson, 1994

Not reported., Green Algae (Scenedesmus quadricauda), 1800000. UG/L, Population, Water temperature: 27.00 C (80.6 F) C, pH: 7.00.

Results:

No observed effect.

- Limiting Values for the Damaging Action of Water Pollutants to Bacteria (Pseudomonas putida) and Green Algae (Scenedesmus quadricauda) in the Cell Multiplication Inhibition Test, Bringmann, G., and R. Kuhn, 1977

Not reported., Green Algae (Scenedesmus quadricauda), 1800000. UG/L, 7 D, Population, Water temperature: 27.00 C (80.6 F) C.

Results:

Affected fish swam at or near surface.

Affected fish lost equilibrium prior to death.

- Comparison of the Toxicity Thresholds of Water Pollutants to Bacteria, Algae, and Protozoa in the Cell Multiplication Inhibition Test, Bringmann, G., and R. Kuhn, 1980

Not reported., Green Algae (Scenedesmus quadricauda), 1800000. UG/L, 8 D, Population, Water temperature: 27.00 C (80.6 F) C.

Results:

Affected fish stopped schooling behavior.

Affected fish swam at or near surface.

- Testing of Substances for Their Toxicity Threshold: Model Organisms Microcystis (Diplocystis) aeruginosa and Scenedesmus quadricauda, Bringmann, G., and R. Kuhn, 1978

Not reported., Green Algae (Scenedesmus quadricauda), 1800000. UG/L, Population.

Results:

No observed effect.

- Comparison of Toxic Limiting Concentrations of Water Contaminants Toward Bacteria, Algae and Protozoa in the Cell-Growth Inhibition Test (Vergleich der Toxischen Grenzkonzentrationen Wassergefährdender Stoffe Gegen Bakte, Bringmann, G., and R. Kuhn, 1979

Effective concentration to {0} % of test organisms, Green Algae (*Scenedesmus quadricauda*), 1800000. UG/L, Population.

Results:

No observed effect.

- Limiting Values for the Noxious Effects of Water Pollutant Material to Blue Algae (*Microcystis aeruginosa*) and Green Algae (*Scenedesmus quadricauda*) in Cell Propagation Inhibition Tests (Grenzwerte der Schadwirkung Wasse, Bringmann, G., and R. Kuhn, 1978

LC50, Fairy Shrimp (*Streptocephalus proboscideus*), 193000. UMOL/L, 24 H, Mortality.

Results:

No observed effect.

- Comparative Acute Toxicity of the First 50 Multicentre Evaluation of In Vitro Cytotoxicity Chemicals to Aquatic Non-vertebrates, Calleja, M.C., G. Persoone, and P. Geladi, 1994

LC50, Fairy Shrimp (*Streptocephalus proboscideus*), larva(e), 193000. UMOL/L, 24 H, Mortality, Water temperature: 25.00 C (77.0 F) C.

Results:

No observed effect.

- Cyst-Based Toxicity Tests. IV. The Potential of Ecotoxicological Tests for the Prediction of Acute Toxicity in Man as Evaluated on the First Ten Chemicals of the MEIC Programme, Calleja, M.C., and G. Persoone, 1992

LC50, Midge (*Chironomus riparius*), larva(e), 12500000. UG/L, 48 H, Mortality, Water temperature: 21.00 C (69.8 F) C, pH: 8.20, Hardness: 210.00 MG/L.

Results:

No observed effect.

- A QSAR for Base-Line Toxicity to the Midge *Chironomus riparius*, Roghair, C.J., A. Buijze, E.S.E. Yedema, and J.L.M. Hermens, 1994

Effective concentration to {0} % of test organisms, Midge (*Chironomus riparius*), larva(e), 3000000. UG/L, 48 H, Mortality, Water temperature: 21.00 C (69.8 F) C, pH: 8.20, Hardness: 210.00 MG/L.

Results:

No observed effect.

- A QSAR for Base-Line Toxicity to the Midge *Chironomus riparius*, Roghair, C.J., A. Buijze, E.S.E. Yedema, and J.L.M. Hermens, 1994

Effective concentration to {0} % of test organisms, Midge (*Chironomus riparius*), larva(e), 18000000. UG/L, 48 H, Mortality, Water temperature: 21.00 C (69.8 F) C, pH: 8.20, Hardness: 210.00 MG/L.

Results:

No observed effect.

- A QSAR for Base-Line Toxicity to the Midge *Chironomus riparius*, Roghair, C.J., A. Buijze, E.S.E. Yedema, and J.L.M. Hermens, 1994

Not reported., Flagellate Euglenoid (*Entosiphon sulcatum*), 4930000. UG/L, 72 H, Population, Water temperature: 25.00 C (77.0 F) C.



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 14

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

Results:

Affected fish lost equilibrium prior to death.

- Comparison of the Toxicity Thresholds of Water Pollutants to Bacteria, Algae, and Protozoa in the Cell Multiplication Inhibition Test, Bringmann, G., and R. Kuhn, 1980

Not reported., Flagellate Euglenoid (*Entosiphon sulcatum*), 4930000. UG/L, 72 H, Population, Water temperature: 25.00 C (77.0 F) C, pH: 6.90.

Results:

No observed effect.

- Investigation of Biological Harmful Effects of Chemical Substances Which are Classified as Dangerous for Water on Protozoa, Bringmann, G., 1978

Not reported., Flagellate Euglenoid (*Entosiphon sulcatum*), 4930000. UG/L, Population.

Results:

No observed effect.

- Comparison of the Effect of Toxic Substances on the Flagellate Organisms Such as Ciliates and the Holozoic Bacteria-Devouring Organisms Such as Saprozoic Protozoans (Vergleich der Wirkung von Schadstoffen auf Flagellate, Bringmann, G., and R. Kuhn, 1981

Not reported., Flagellate Euglenoid (*Entosiphon sulcatum*), 4930000. UG/L, Population.

Results:

No observed effect.

- Comparison of Toxic Limiting Concentrations of Water Contaminants Toward Bacteria, Algae and Protozoa in the Cell-Growth Inhibition Test (Vergleich der Toxischen Grenzkonzentrationen Wassergefahrdender Stoffe Gegen Bakte, Bringmann, G., and R. Kuhn, 1979

Not reported., Blue-Green Algae (*Anacystis aeruginosa*), 1000000. UG/L, 8 D, Population, Water temperature: 27.00 C (80.6 F) C.

Results:

Age Effects.

- Testing of Substances for Their Toxicity Threshold: Model Organisms *Microcystis* (*Diplocystis*) *aeruginosa* and *Scenedesmus quadricauda*, Bringmann, G., and R. Kuhn, 1978

LC50, Rotifer (*Brachionus calyciflorus*), 476000. UMOL/L, 24 H, Mortality.

Results:

No observed effect.

- Comparative Acute Toxicity of the First 50 Multicentre Evaluation of In Vitro Cytotoxicity Chemicals to Aquatic Non-vertebrates, Calleja, M.C., G. Persoone, and P. Geladi, 1994

LC50, Rotifer (*Brachionus calyciflorus*), Post-hatch, 476000. UMOL/L, 24 H, Mortality, Water temperature: 25.00 C (77.0 F) C.

Results:

Affected fish lost equilibrium prior to death.

- Cyst-Based Toxicity Tests. IV. The Potential of Ecotoxicological Tests for the Prediction of Acute Toxicity in Man as Evaluated on the First Ten Chemicals of the MEIC Programme, Calleja, M.C., and G. Persoone, 1992

Effective concentration to 50% of test organisms., Inflated Duckweed (*Lemna gibba*), 75.54 MMOL/L, 7 D, Population, Water temperature: 27.50 C (81.5 F) C.

Results:

Age Effects.

- Physiological Effects of Ethylene Glycol-Induced Cribriiform Frond Structure in Lemna gibba, Thomas, D.A., 1998

Effective concentration to 10% of test organisms., Inflated Duckweed (Lemna gibba), 12.44 MMOL/L, 7 D, Population, Water temperature: 27.50 C (81.5 F) C.

Results:

Age Effects.

- Physiological Effects of Ethylene Glycol-Induced Cribriiform Frond Structure in Lemna gibba, Thomas, D.A., 1998

Not reported., Iberian Ribbed Newt (Pleurodeles waltl), larva(e), 1500. UG/L, 12 D, Genetics, Water temperature: 20.00 C (68.0 F) C.

Results:

No observed effect.

- Evaluation of the Genotoxicity of N-Nitrosoatrazine, N-Nitrosodiethanolamine and Their Precursors In Vivo Using the Newt Micronucleus Test, L'Haridon, J., M. Fernandez, V. Ferrier, and J. Bellan, 1993

Effective concentration to {0} % of test organisms, Sand Goby (Pomatoschistus minutus), juvenile(s), 20.00 UG/L, 8 M, Mortality, Water temperature: 6.40 C (43.5 F) - 11.50 C (52.7 F) C.

Results:

Affected fish stopped schooling behavior.

Affected fish became hyperactive.

No loss of equilibrium observed.

- Bioindicators and Reproductive Effects of Prolonged 17beta-Oestradiol Exposure in a Marine Fish, the Sand Goby (Pomatoschistus minutus), Robinson, C.D., E. Brown, J.A. Craft, I.M. Davies, C. Megginson, C. Miller, and C.F. Moffat, 2007

Effective concentration to {0} % of test organisms, Sand Goby (Pomatoschistus minutus), juvenile(s), 20.00 UG/L, 8 M, Biochemistry, Water temperature: 6.40 C (43.5 F) - 11.50 C (52.7 F) C.

Results:

Affected fish stopped schooling behavior.

Affected fish became hypoactive.

Affected fish swam at or near bottom.

No loss of equilibrium observed.

- Bioindicators and Reproductive Effects of Prolonged 17beta-Oestradiol Exposure in a Marine Fish, the Sand Goby (Pomatoschistus minutus), Robinson, C.D., E. Brown, J.A. Craft, I.M. Davies, C. Megginson, C. Miller, and C.F. Moffat, 2007

Effective concentration to {0} % of test organisms, Sand Goby (Pomatoschistus minutus), juvenile(s), 20.00 UG/L, 8 M, Development, Water temperature: 6.40 C (43.5 F) - 11.50 C (52.7 F) C.

Results:

Age Effects.

- Bioindicators and Reproductive Effects of Prolonged 17beta-Oestradiol Exposure in a Marine Fish, the Sand Goby (Pomatoschistus minutus), Robinson, C.D., E. Brown, J.A. Craft, I.M. Davies, C. Megginson, C. Miller, and C.F. Moffat, 2007

Effective concentration to {0} % of test organisms, Sand Goby (Pomatoschistus minutus), juvenile(s), 20.00 UG/L, 8 M, Genetics, Water temperature: 6.40 C (43.5 F) - 11.50 C

(52.7 F) C.

Results:

Age Effects.

- Bioindicators and Reproductive Effects of Prolonged 17beta-Oestradiol Exposure in a Marine Fish, the Sand Goby (*Pomatoschistus minutus*), Robinson, C.D., E. Brown, J.A. Craft, I.M. Davies, C. Megginson, C. Miller, and C.F. Moffat, 2007

Not reported., Sand Goby (*Pomatoschistus minutus*), juvenile(s), 20.00 UG/L, 8 M, Reproduction, Water temperature: 6.40 C (43.5 F) - 11.50 C (52.7 F) C.

Results:

Loss of equilibrium.

- Bioindicators and Reproductive Effects of Prolonged 17beta-Oestradiol Exposure in a Marine Fish, the Sand Goby (*Pomatoschistus minutus*), Robinson, C.D., E. Brown, J.A. Craft, I.M. Davies, C. Megginson, C. Miller, and C.F. Moffat, 2007

Not reported., White Sturgeon (*Acipenser transmontanus*), 1000. - 10000. UG/L, 96 H, Mortality, Water temperature: 15.00 C (59.0 F) C, pH: 7.90, Hardness: <=34.10 MG/L.

Results:

No observed effect.

- Acute Toxicity Testing with Juvenile White Sturgeon (*Acipenser transmontanus*), Bennett, W.R., and A.P. Farrell, 1998

Not reported., Blue-Green Algae (*Microcystis aeruginosa*), 1000000. UG/L, 8 D, Population, pH: 7.00.

Results:

No observed effect.

- Determination of the Biologically Harmful Effect of Water Pollutants by Means of the Retardation of Cell Proliferation of the Blue Algae *Microcystis*, Bringmann, G., 1975

Effective concentration to {0} % of test organisms, Blue-Green Algae (*Microcystis aeruginosa*), 1000000. UG/L, Population.

Results:

No observed effect.

- Limiting Values for the Noxious Effects of Water Pollutant Material to Blue Algae (*Microcystis aeruginosa*) and Green Algae (*Scenedesmus quadricauda*) in Cell Propagation Inhibition Tests (Grenzwerte der Schadwirkung Wasse, Bringmann, G., and R. Kuhn, 1978

LC50, Nematode (*Caenorhabditis elegans*), larva(e), 6.550 % V/V, 24 H, Mortality.

Results:

Age Effects.

- Toxicity of Short-Chain Alcohols to the Nematode *Caenorhabditis elegans*: A Comparison of Endpoints, Thompson, G., and D.I. De Pomerai, 2005

LC50, Nematode (*Caenorhabditis elegans*), larva(e), 6.700 % V/V, 24 H, Mortality.

Results:

No observed effect.

- Toxicity of Short-Chain Alcohols to the Nematode *Caenorhabditis elegans*: A Comparison of Endpoints, Thompson, G., and D.I. De Pomerai, 2005

Effective concentration to 50% of test organisms., Green Algae (*Chlorella fusca* ssp. *vacuolata*), 0.190 UMOL/L, 24 H, Population, Water temperature: 28.00 C (82.4 F) C, pH: 6.90.

Results:

Loss of equilibrium.

- What Contributes to the Combined Effect of a Complex Mixture?, Altenburger, R., H. Walter, and M. Grote, 2004

Lethal concentration to 0% of test organisms., Carp (*Leuciscus idus* ssp. *melanotus*), 7020. MG/L, 48 H, Mortality.

Results:

Affected fish stopped schooling behavior.

Affected fish became hypoactive.

Affected fish swam at or near bottom.

No loss of equilibrium observed.

- Results of the Investigation of 200 Chemical Compounds for Acute Fish Toxicity with the Golden Orfe Test (Ergebnisse der Untersuchung von 200 Chemischen Verbindungen auf Akute Fischtoxizität mit dem Goldorfentest), Juhnke, I., and D. Luedemann, 1978

LC50, Carp (*Leuciscus idus* ssp. *melanotus*), 8970. MG/L, 48 H, Mortality.

Results:

No observed effect.

- Results of the Investigation of 200 Chemical Compounds for Acute Fish Toxicity with the Golden Orfe Test (Ergebnisse der Untersuchung von 200 Chemischen Verbindungen auf Akute Fischtoxizität mit dem Goldorfentest), Juhnke, I., and D. Luedemann, 1978

Lethal concentration to 100% of test organisms., Carp (*Leuciscus idus* ssp. *melanotus*), 10920. MG/L, 48 H, Mortality.

Results:

No observed effect.

- Results of the Investigation of 200 Chemical Compounds for Acute Fish Toxicity with the Golden Orfe Test (Ergebnisse der Untersuchung von 200 Chemischen Verbindungen auf Akute Fischtoxizität mit dem Goldorfentest), Juhnke, I., and D. Luedemann, 1978

Lethal concentration to 0% of test organisms., Carp (*Leuciscus idus* ssp. *melanotus*), 8190. MG/L, 48 H, Mortality.

Results:

Affected fish stopped schooling behavior.

- Results of the Investigation of 200 Chemical Compounds for Acute Fish Toxicity with the Golden Orfe Test (Ergebnisse der Untersuchung von 200 Chemischen Verbindungen auf Akute Fischtoxizität mit dem Goldorfentest), Juhnke, I., and D. Luedemann, 1978

LC50, Carp (*Leuciscus idus* ssp. *melanotus*), 9280. MG/L, 48 H, Mortality.

Results:

No observed effect.

- Results of the Investigation of 200 Chemical Compounds for Acute Fish Toxicity with the Golden Orfe Test (Ergebnisse der Untersuchung von 200 Chemischen Verbindungen auf Akute Fischtoxizität mit dem Goldorfentest), Juhnke, I., and D. Luedemann, 1978

Lethal concentration to 100% of test organisms., Carp (*Leuciscus idus* ssp. *melanotus*), 9750. MG/L, 48 H, Mortality.

Results:

No observed effect.

- Results of the Investigation of 200 Chemical Compounds for Acute Fish Toxicity with the Golden Orfe Test (Ergebnisse der Untersuchung von 200 Chemischen Verbindungen auf Akute Fischtoxizität mit dem Goldorfentest), Juhnke, I., and D. Luedemann, 1978



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 18

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

Effective concentration to {0} % of test organisms, Ciliate Protozoa (*Tetrahymena thermophila*), Stationary Growth Phase, 754.0 MG/L, 48 H, Population, Water temperature: 32.00 C (89.6 F) C.

Results:

No observed effect.

- A Case for the Inclusion of a Protozoan Test in Aquatic Toxicity Assessment Using *Tetrahymena*, Pauli, W., S. Berger, L. Jaskulka, and S. Schmitz, 1993

Effective concentration to 50% of test organisms., Ciliate Protozoa (*Tetrahymena thermophila*), Stationary Growth Phase, 8130. MG/L, 48 H, Population, Water temperature: 32.00 C (89.6 F) C.

Results:

No observed effect.

- A Case for the Inclusion of a Protozoan Test in Aquatic Toxicity Assessment Using *Tetrahymena*, Pauli, W., S. Berger, L. Jaskulka, and S. Schmitz, 1993

Effective concentration to 20% of test organisms., Ciliate Protozoa (*Tetrahymena thermophila*), Stationary Growth Phase, 3142. MG/L, 48 H, Population, Water temperature: 32.00 C (89.6 F) C.

Results:

No observed effect.

- A Case for the Inclusion of a Protozoan Test in Aquatic Toxicity Assessment Using *Tetrahymena*, Pauli, W., S. Berger, L. Jaskulka, and S. Schmitz, 1993

Effective concentration to 0% of test organisms., Ciliate Protozoa (*Tetrahymena thermophila*), Exponential Growth Phase, 250000. UG/L, 90 M, Avoidance, Water temperature: 32.00 C (89.6 F) C.

Results:

No observed effect.

- Chemosensory Responses of Ciliates: A Sensitive End Point in Xenobiotic Hazard Assessment, Pauli, W., S. Berger, S. Schmitz, and L. Jaskulka, 1994

Effective concentration to 10% of test organisms., Ciliate Protozoa (*Tetrahymena thermophila*), Exponential Growth Phase, 470000. UG/L, 90 M, Avoidance, Water temperature: 32.00 C (89.6 F) C.

Results:

No observed effect.

- Chemosensory Responses of Ciliates: A Sensitive End Point in Xenobiotic Hazard Assessment, Pauli, W., S. Berger, S. Schmitz, and L. Jaskulka, 1994

Effective concentration to 20% of test organisms., Ciliate Protozoa (*Tetrahymena thermophila*), Stationary Growth Phase, 4595. MG/L, 48 H, Population, Water temperature: 32.00 C (89.6 F) C.

Results:

No observed effect.

- A Case for the Inclusion of a Protozoan Test in Aquatic Toxicity Assessment Using *Tetrahymena*, Pauli, W., S. Berger, L. Jaskulka, and S. Schmitz, 1993

Effective concentration to {0} % of test organisms, Ciliate Protozoa (*Tetrahymena thermophila*), 754.0 MG/L, 48 H, Population.

Results:

No observed effect.



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 19

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

- Validation of Toxicological Endpoints with Tetrahymena. Membrane Functions, Chemotaxis, Cell Rotation in Electric Fields (Validierung Toxikologischer Prüfparameter an Tetrahymena: Membranfunktionen, Chemotaxis, Rotation, Pauli, W., S. Berger, S. Schmitz, L. Jaskulka, and K. Stadlander, 1993

Effective concentration to 10% of test organisms., Ciliate Protozoa (Tetrahymena thermophila), 1830. MG/L, 48 H, Population.

Results:

No observed effect.

- Validation of Toxicological Endpoints with Tetrahymena. Membrane Functions, Chemotaxis, Cell Rotation in Electric Fields (Validierung Toxikologischer Prüfparameter an Tetrahymena: Membranfunktionen, Chemotaxis, Rotation, Pauli, W., S. Berger, S. Schmitz, L. Jaskulka, and K. Stadlander, 1993

Effective concentration to 20% of test organisms., Ciliate Protozoa (Tetrahymena thermophila), 4595. MG/L, 48 H, Population.

Results:

No observed effect.

- Validation of Toxicological Endpoints with Tetrahymena. Membrane Functions, Chemotaxis, Cell Rotation in Electric Fields (Validierung Toxikologischer Prüfparameter an Tetrahymena: Membranfunktionen, Chemotaxis, Rotation, Pauli, W., S. Berger, S. Schmitz, L. Jaskulka, and K. Stadlander, 1993

Effective concentration to 50% of test organisms., Ciliate Protozoa (Tetrahymena thermophila), 8130. MG/L, 48 H, Population.

Results:

No observed effect.

- Validation of Toxicological Endpoints with Tetrahymena. Membrane Functions, Chemotaxis, Cell Rotation in Electric Fields (Validierung Toxikologischer Prüfparameter an Tetrahymena: Membranfunktionen, Chemotaxis, Rotation, Pauli, W., S. Berger, S. Schmitz, L. Jaskulka, and K. Stadlander, 1993

Effective concentration to 10% of test organisms., Ciliate Protozoa (Tetrahymena thermophila), 1200. MG/L, 48 H, Population.

Results:

No observed effect.

- Validation of Toxicological Endpoints with Tetrahymena. Membrane Functions, Chemotaxis, Cell Rotation in Electric Fields (Validierung Toxikologischer Prüfparameter an Tetrahymena: Membranfunktionen, Chemotaxis, Rotation, Pauli, W., S. Berger, S. Schmitz, L. Jaskulka, and K. Stadlander, 1993

Effective concentration to 20% of test organisms., Ciliate Protozoa (Tetrahymena thermophila), 3142. MG/L, 48 H, Population.

Results:

No observed effect.

- Validation of Toxicological Endpoints with Tetrahymena. Membrane Functions, Chemotaxis, Cell Rotation in Electric Fields (Validierung Toxikologischer Prüfparameter an Tetrahymena: Membranfunktionen, Chemotaxis, Rotation, Pauli, W., S. Berger, S. Schmitz, L. Jaskulka, and K. Stadlander, 1993

Effective concentration to 50% of test organisms., Ciliate Protozoa (Tetrahymena thermophila), 7462. MG/L, 48 H, Population.

Results:



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 20

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

Affected fish swam at or near surface.

Affected fish lost equilibrium prior to death.

- Validation of Toxicological Endpoints with Tetrahymena. Membrane Functions, Chemotaxis, Cell Rotation in Electric Fields (Validierung Toxikologischer Prüfparameter an Tetrahymena: Membranfunktionen, Chemotaxis, Rotation, Pauli, W., S. Berger, S. Schmitz, L. Jaskulka, and K. Stadlander, 1993

Effective concentration to {0} % of test organisms, Zebra Danio (Danio rerio), adult(s), 1.000 MG/ML, 1 W, Biochemistry, Water temperature: 28.00 C (82.4 F) C.

Results:

Affected fish stopped schooling behavior.

Affected fish became hypoactive.

Affected fish swam at or near bottom.

No loss of equilibrium observed.

- Short-Term Exposure to Low Concentrations of the Synthetic Androgen Methyltestosterone Affects Vitellogenin and Steroid Levels in Adult male Zebrafish (Danio rerio), Andersen, L., R. Goto-Kazeto, J.M. Trant, J.P. Nash, B. Korsgaard, and P. Bjerregaard, 2006

Effective concentration to {0} % of test organisms, Zebra Danio (Danio rerio), adult(s), 1.000 MG/ML, 1 W, Hormone(s), Water temperature: 28.00 C (82.4 F) C.

Results:

Age Effects.

- Short-Term Exposure to Low Concentrations of the Synthetic Androgen Methyltestosterone Affects Vitellogenin and Steroid Levels in Adult male Zebrafish (Danio rerio), Andersen, L., R. Goto-Kazeto, J.M. Trant, J.P. Nash, B. Korsgaard, and P. Bjerregaard, 2006

Effective concentration to {0} % of test organisms, Zebra Danio (Danio rerio), adult(s), 1.000 MG/ML, 1 W, Hormone(s), Water temperature: 28.00 C (82.4 F) C.

Results:

Loss of equilibrium.

- Short-Term Exposure to Low Concentrations of the Synthetic Androgen Methyltestosterone Affects Vitellogenin and Steroid Levels in Adult male Zebrafish (Danio rerio), Andersen, L., R. Goto-Kazeto, J.M. Trant, J.P. Nash, B. Korsgaard, and P. Bjerregaard, 2006

Effective concentration to {0} % of test organisms, Zebra Danio (Danio rerio), adult(s), 1.000 MG/ML, 1 W, Enzyme(s), Water temperature: 28.00 C (82.4 F) C.

Results:

Loss of equilibrium.

- Short-Term Exposure to Low Concentrations of the Synthetic Androgen Methyltestosterone Affects Vitellogenin and Steroid Levels in Adult male Zebrafish (Danio rerio), Andersen, L., R. Goto-Kazeto, J.M. Trant, J.P. Nash, B. Korsgaard, and P. Bjerregaard, 2006

Not reported., Zebra Danio (Danio rerio), adult(s), 1.000 MG/ML, 1 W, Growth, Water temperature: 28.00 C (82.4 F) C.

Results:

Age Effects.

- Short-Term Exposure to Low Concentrations of the Synthetic Androgen Methyltestosterone Affects Vitellogenin and Steroid Levels in Adult male Zebrafish (Danio rerio), Andersen, L., R. Goto-Kazeto, J.M. Trant, J.P. Nash, B. Korsgaard, and P.



Bjerregaard, 2006

Effective concentration to {0} % of test organisms, Zebra Danio (Danio rerio), adult(s), 1.000 MG/ML, 1 W, Hormone(s), Water temperature: 28.00 C (82.4 F) C.

Results:

Age Effects.

- Short-Term Exposure to Low Concentrations of the Synthetic Androgen Methyltestosterone Affects Vitellogenin and Steroid Levels in Adult male Zebrafish (Danio rerio), Andersen, L., R. Goto-Kazeto, J.M. Trant, J.P. Nash, B. Korsgaard, and P. Bjerregaard, 2006

Not reported., Zebra Danio (Danio rerio), juvenile(s), 0.100 0/00, 40 D, Mortality, Water temperature: 29.20 C (84.6 F) C.

Results:

Age Effects.

- Evaluation of a 40 day Assay for Testing Endocrine Disrupters: Effects of an Anti-Estrogen and an Aromatase Inhibitor on Sex Ratio and Vitellogenin Concentrations in Juvenile Zebrafish (Danio rerio), Andersen, L., K. Kinnberg, H. Holbech, B. Korsgaard, and P. Bjerregaard, 2004

Not reported., Zebra Danio (Danio rerio), juvenile(s), 0.100 0/00, 40 D, Population, Water temperature: 29.20 C (84.6 F) C.

Results:

Age Effects.

- Evaluation of a 40 day Assay for Testing Endocrine Disrupters: Effects of an Anti-Estrogen and an Aromatase Inhibitor on Sex Ratio and Vitellogenin Concentrations in Juvenile Zebrafish (Danio rerio), Andersen, L., K. Kinnberg, H. Holbech, B. Korsgaard, and P. Bjerregaard, 2004

Not reported., Zebra Danio (Danio rerio), juvenile(s), 0.100 0/00, 18 D, Biochemistry, Water temperature: 29.20 C (84.6 F) C.

Results:

Age Effects.

- Evaluation of a 40 day Assay for Testing Endocrine Disrupters: Effects of an Anti-Estrogen and an Aromatase Inhibitor on Sex Ratio and Vitellogenin Concentrations in Juvenile Zebrafish (Danio rerio), Andersen, L., K. Kinnberg, H. Holbech, B. Korsgaard, and P. Bjerregaard, 2004

Effective concentration to {0} % of test organisms, Zebra Danio (Danio rerio), adult(s), 1.000 MG/ML, 1 W, Genetics, Water temperature: 28.00 C (82.4 F) C.

Results:

Age Effects.

- Short-Term Exposure to Low Concentrations of the Synthetic Androgen Methyltestosterone Affects Vitellogenin and Steroid Levels in Adult male Zebrafish (Danio rerio), Andersen, L., R. Goto-Kazeto, J.M. Trant, J.P. Nash, B. Korsgaard, and P. Bjerregaard, 2006

Not reported., Zebra Danio (Danio rerio), juvenile(s), 0.100 0/00, 18 - 40 D, Growth, Water temperature: 29.20 C (84.6 F) C.

Results:

Age Effects.

- Evaluation of a 40 day Assay for Testing Endocrine Disrupters: Effects of an Anti-Estrogen and an Aromatase Inhibitor on Sex Ratio and Vitellogenin Concentrations



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 22

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

in Juvenile Zebrafish (*Danio rerio*), Andersen, L., K. Kinnberg, H. Holbech, B. Korsgaard, and P. Bjerregaard, 2004

Not reported., Ciliate (*Uronema parduczi*), 3425000. UG/L, Population.

Results:

No observed effect.

- Comparison of the Effect of Toxic Substances on the Flagellate Organisms Such as Ciliates and the Holozoic Bacteria-Devouring Organisms Such as Saprozoic Protozoans (Vergleich der Wirkung von Schadstoffen auf Flagellate, Bringmann, G., and R. Kuhn, 1981

Not reported., Ciliate (*Uronema parduczi*), 3425000. UG/L, 20 H, Population, Water temperature: 0.00 C (32.0 F) C, pH: 6.90.

Results:

No observed effect.

- Determination of the Biological Effect of Water Pollutants in Protozoa. II. Bacteriovorous Ciliates (Bestimmung der Biologischen Schadwirkung Wassergefahrdender Stoffe Gegen Protozoen. II. Bakterienfressende Ciliaten, Bringmann, G., and R. Kuhn, 1980

Effective concentration to 10% of test organisms., Green Algae Order (Chlorococcales), 680.0 MG/L, 24 H, Physiology.

Results:

Affected fish lost equilibrium prior to death.

- Bestimmung der Biologischen Schadwirkung Wassergefahrdender Stoffe im Assimilations-Zehrungs-Test (A-Z-Test), Krebs, F., 1991

Effective concentration to 50% of test organisms., Green Algae Order (Chlorococcales), 1000. MG/L, 24 H, Physiology.

Results:

Affected fish stopped schooling behavior.

Affected fish swam at or near surface.

- Bestimmung der Biologischen Schadwirkung Wassergefahrdender Stoffe im Assimilations-Zehrungs-Test (A-Z-Test), Krebs, F., 1991

Effective concentration to 50% of test organisms., Protozoa (*Spirostomum ambiguum*), 116.0 MMOL/L, 24 H, Development, Water temperature: 25.00 C (77.0 F) C, pH: 7.40, Hardness: 2.80 MG/L.

Results:

No observed effect.

- Spirotox - A new Tool for Testing the Toxicity of Volatile Compounds, Nalecz-Jawecki, G., and J. Sawicki, 1999

LC50, Protozoa (*Spirostomum ambiguum*), 369.0 MMOL/L, 24 H, Mortality, Water temperature: 25.00 C (77.0 F) C, pH: 7.40, Hardness: 2.80 MG/L.

Results:

No observed effect.

- Spirotox - A new Tool for Testing the Toxicity of Volatile Compounds, Nalecz-Jawecki, G., and J. Sawicki, 1999

Effective concentration to 50% of test organisms., Protozoa (*Spirostomum ambiguum*), 119.0 MMOL/L, 48 H, Development, Water temperature: 25.00 C (77.0 F) C, pH: 7.40, Hardness: 2.80 MG/L.



SAFETY DATA SHEET

Dry Moly Lubricant

Page: 23

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

Results:

No observed effect.

- Spirotox - A new Tool for Testing the Toxicity of Volatile Compounds, Nalecz-Jawecki, G., and J. Sawicki, 1999

LC50, Protozoa (*Spirostomum ambiguum*), 354.0 MMOL/L, 48 H, Mortality, Water temperature: 25.00 C (77.0 F) C, pH: 7.40, Hardness: 2.80 MG/L.

Results:

No observed effect.

- Spirotox - A new Tool for Testing the Toxicity of Volatile Compounds, Nalecz-Jawecki, G., and J. Sawicki, 1999

Inhibition concentration to 50% of test organisms, Fungus (*Geotrichum candidum*), 660.0 MMOL/L, 4 H, Physiology, Water temperature: 28.00 C (82.4 F) C, pH: 6.50.

Results:

No observed effect.

- Acute Toxicity of 16 Water-Soluble Chemicals to the Fungus *Geotrichum candidum* Measured by Reduction in Glucose Uptake, Jacobsen, T., 1995

Effective concentration to {0} % of test organisms, Coastal Cutthroat Trout (*Oncorhynchus clarkii* ssp. *clarkii*), 0.010 % V/V, 10 S, Physiology.

Results:

No observed effect.

- Behavioral Impairment and Increased Predation Mortality in Cutthroat Trout Exposed to Carbaryl, Labenia, J.S., D.H. Baldwin, B.L. French, J.W. Davis, and N.L. Scholz, 2007

Effective concentration to {0} % of test organisms, Coastal Cutthroat Trout (*Oncorhynchus clarkii* ssp. *clarkii*), 0.010 %, 6 H, Behavior.

Results:

Affected fish swam at or near surface.

Affected fish lost equilibrium prior to death.

- Behavioral Impairment and Increased Predation Mortality in Cutthroat Trout Exposed to Carbaryl, Labenia, J.S., D.H. Baldwin, B.L. French, J.W. Davis, and N.L. Scholz, 2007

Effective concentration to {0} % of test organisms, Coastal Cutthroat Trout (*Oncorhynchus clarkii* ssp. *clarkii*), 0.010 %, 6 H, Enzyme(s).

Results:

Affected fish swam at or near surface.

Affected fish lost equilibrium prior to death.

- Behavioral Impairment and Increased Predation Mortality in Cutthroat Trout Exposed to Carbaryl, Labenia, J.S., D.H. Baldwin, B.L. French, J.W. Davis, and N.L. Scholz, 2007

Effective concentration to {0} % of test organisms, Coastal Cutthroat Trout (*Oncorhynchus clarkii* ssp. *clarkii*), 0.010 %, 6 H, Enzyme(s).

Results:

Affected fish lost equilibrium prior to death.

- Behavioral Impairment and Increased Predation Mortality in Cutthroat Trout Exposed to Carbaryl, Labenia, J.S., D.H. Baldwin, B.L. French, J.W. Davis, and N.L. Scholz, 2007



Section 13. Disposal Considerations

13.1 Waste Disposal Method: Disposal should be made in accordance with federal, state and local regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Consumer Commodity
DOT Hazard Class: ORM-D ORM-D
UN/NA Number:

14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: Aerosols, Ltd. Qty.
UN Number: 1950
Hazard Class: N.A. **ADR Classification:** 2.1

14.2 MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: Aerosols, Ltd. Qty.
UN Number: 1950 **Packing Group:**
Hazard Class: N.A. **IMDG Classification:** 2.1
Marine Pollutant: No

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Aerosols, flammable, 2.1, Ltd Qty
UN Number: 1950
Hazard Class: N.A. **IATA Classification:** 2.1

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
67-64-1	Acetone	No	Yes 5000 LB	No
78-93-3	Methyl ethyl ketone	No	Yes 5000 LB	No
74-98-6	Propane	No	No	No
106-97-8	Butane	No	No	No
67-63-0	Isopropyl alcohol	No	No	Yes

CAS # Hazardous Components (Chemical Name)

Other US EPA or State Lists

67-64-1	Acetone	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory, 4 Test; CA PROP.65: No; CA TAC, Title 8: Title 8; MA Oil/HazMat: Yes; MI CMR, Part 5: Part 5; NC TAP: No; NJ EHS: Yes - 0006; NY Part 597: Yes; PA HSL: Yes - E; SC TAP: No; WI Air: Yes
78-93-3	Methyl ethyl ketone	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No; CA TAC, Title 8: TAC, Title 8; MA Oil/HazMat: Yes; MI CMR, Part 5: Part 5; NC TAP: Yes; NJ EHS: Yes - 1258; NY Part 597: Yes; PA HSL: Yes - E; SC TAP: Yes; WI Air: Yes
74-98-6	Propane	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 1594; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No
106-97-8	Butane	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No; CA TAC, Title 8: Title 8; MA Oil/HazMat: Yes;



SAFETY DATA SHEET

Dry Moly Lubricant

Revision: 03/18/2014

Supersedes Revision: 12/13/2013

67-63-0 Isopropyl alcohol

MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 0273; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No
CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory, 4 Test; CA PROP.65: No; CA TAC, Title 8: TAC, Title 8; MA Oil/HazMat: No; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 1076; NY Part 597: No; PA HSL: Yes - E; SC TAP: No; WI Air: No

CAS # Hazardous Components (Chemical Name)

67-64-1 Acetone

78-93-3 Methyl ethyl ketone

74-98-6 Propane

106-97-8 Butane

67-63-0 Isopropyl alcohol

International Regulatory Lists

Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

European Community Hazard Symbol codes:

European Community Risk and Safety Phrases:

No data available.

Section 16. Other Information

Revision Date: 03/18/2014

Additional Information About This Product: No data available.

Company Policy or Disclaimer:

Cyclo Industries, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. Cyclo Industries, Inc. makes no representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose with respect to the information set forth herein or to the product to which the information refers. Accordingly, Cyclo Industries, Inc. will not be responsible for damages resulting from use of or reliance upon this information.