



Liquid Flowzan® Biopolymer

Version 1.17

Revision Date 2022-08-04

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : Liquid Flowzan® Biopolymer
 Material : 1106106, 1016833, 1105963

Company : Chevron Phillips Chemical Company LP
 Drilling Specialties Company LLC
 10001 Six Pines Drive
 The Woodlands, TX 77380

Emergency telephone:

Health:

866.442.9628 (North America)
 1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
 Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
 Mexico CHEMTREC 01-800-681-9531 (24 hours)
 South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
 Argentina: +(54)-1159839431
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
 Belgium: 070 245 245 (24 hours/day, 7 days/week)
 Bulgaria: +359 2 9154 233
 Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
 Cyprus: 1401
 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
 Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Finland: 0800 147 111 09 471 977 (24 hours/day)
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
 Iceland: 543 2222 (24 hours/day, 7 days/week)
 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic
 Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371
 67042473. (24 hours.)
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Lithuania: +370 (85) 2362052

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Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
 Malta: +356 2395 2000
 The Netherlands: NVIC: +31 (0)88 755 8000
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Portugal: CIAV phone number: +351 800 250 250
 Romania: +40213183606
 Slovakia: +421 2 5477 4166
 Slovenia: Phone number: 112
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group
 E-mail address : SDS@CPChem.com
 Website : www.CPChem.com

SECTION 2: Hazards identification**Classification of the substance or mixture**

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

:

Not a hazardous substance or mixture.

Labeling

Not a hazardous substance or mixture.

Carcinogenicity:**IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : Drilling Mud Additive

Molecular formula : Mixture

Component	CAS-No.	Weight %
Distillates (petroleum), hydrotreated light	64742-47-8	40 - 60
Polymerization bottoms	64741-71-5	40 - 60

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SECTION 4: First aid measures

- General advice : No hazards which require special first aid measures.
- If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
- In case of eye contact : Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

- Flash point : $\geq 96^{\circ}\text{C}$ ($\geq 204^{\circ}\text{F}$)
Method: closed cup
- Autoignition temperature : $> 200^{\circ}\text{C}$ ($> 392^{\circ}\text{F}$)
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Fire and explosion protection : Normal measures for preventive fire protection.

SECTION 6: Accidental release measures

- Methods for cleaning up : Wipe up with absorbent material (e.g. cloth, fleece). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

- Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

- Requirements for storage areas and containers : Electrical installations / working materials must comply with the technological safety standards.
- Advice on common storage : No materials to be especially mentioned.

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SECTION 8: Exposure controls/personal protection**Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

- Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
- Hygiene measures : General industrial hygiene practice.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

- Physical state : liquid
 Color : Light brown
 Odor : negligible

Safety data

- Flash point : $\geq 96^{\circ}\text{C}$ ($\geq 204^{\circ}\text{F}$)
 Method: closed cup
- Lower explosion limit : No data available
- Upper explosion limit : No data available

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Oxidizing properties	: No
Autoignition temperature	: >200°C (>392°F)
Molecular formula	: Mixture
Molecular weight	: Not applicable
pH	: No data available
Pour point	: No data available
Boiling point/boiling range	: 224-275°C (435-527°F)
Vapor pressure	: No data available
Relative density	: 0.97
Water solubility	: soluble
Partition coefficient: n-octanol/water	: No data available
Viscosity, dynamic	: 72,000 cP
Relative vapor density	: No data available
Evaporation rate	: No data available

SECTION 10: Stability and reactivity

Reactivity	: Stable at normal ambient temperature and pressure.
Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Possibility of hazardous reactions	
Hazardous reactions	: Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.
Conditions to avoid	: No data available.
Other data	: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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Acute oral toxicity

Distillates (petroleum), hydrotreated light : LD50: > 15,000 mg/kg
 Species: Rat
 Sex: male and female
 Method: OECD Test Guideline 423
 Information given is based on data obtained from similar substances.

Polymerization bottoms LD50: > 5,000 mg/kg
 Species: Rat

Acute inhalation toxicity

Distillates (petroleum), hydrotreated light : LC50: > 4.9 mg/l
 Exposure time: 4 h
 Species: Rat
 Sex: male and female
 Test atmosphere: vapor
 Method: OECD Test Guideline 403
 Information given is based on data obtained from similar substances.

Acute dermal toxicity

Distillates (petroleum), hydrotreated light : LD50: > 5,000 mg/kg
 Species: Rat
 Sex: male and female
 Method: OECD Test Guideline 402
 Information given is based on data obtained from similar substances.

Polymerization bottoms LD50: > 2,000 mg/kg
 Species: Rat

Skin irritation

Distillates (petroleum), hydrotreated light : No skin irritation
 Information given is based on data obtained from similar substances.

Polymerization bottoms May irritate skin. largely based on animal evidence.

Eye irritation

Distillates (petroleum), hydrotreated light : No eye irritation
 Information given is based on data obtained from similar substances.

Polymerization bottoms No eye irritation. largely based on animal evidence.

Sensitization

Distillates (petroleum), hydrotreated light : Does not cause skin sensitization.
 Information given is based on data obtained from similar substances.

Polymerization bottoms Did not cause sensitization on laboratory animals.

Repeated dose toxicity

Distillates (petroleum), hydrotreated light : Species: Rat, male and female
 Sex: male and female

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Application Route: oral gavage
 Dose: 25, 150, 1000 mg/kg/d
 NOEL: > 1,000 mg/kg
 Method: OECD Test Guideline 422
 Information given is based on data obtained from similar substances.

Species: Rat, male and female
 Sex: male and female
 Application Route: Inhalation
 Dose: 2600, 5200, 10400 mg/m³
 Exposure time: 13 wk
 Number of exposures: 6 h/d, 5 d/wk
 NOEL: > 10400 mg/m³
 Method: OECD Test Guideline 413
 Information given is based on data obtained from similar substances.

Polymerization bottoms

No adverse effects expected

Genotoxicity in vitroDistillates (petroleum),
hydrotreated light

: Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: In vitro mammalian cell gene mutation test
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 476
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Polymerization bottoms

Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative

Genotoxicity in vivoDistillates (petroleum),
hydrotreated light

: Test Type: Micronucleus test
 Species: Mouse
 Method: OECD Test Guideline 474
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

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	<p>Test Type: Dominant lethal assay Method: OECD Test Guideline 478 Result: negative Remarks: Information given is based on data obtained from similar substances.</p>
Polymerization bottoms	<p>Test Type: In vivo micronucleus test Species: Mouse Method: OECD Test Guideline 474 Result: negative</p>
Reproductive toxicity	
Distillates (petroleum), hydrotreated light	: No adverse effects expected Information given is based on data obtained from similar substances.
Polymerization bottoms	No adverse effects expected
Developmental Toxicity	
Distillates (petroleum), hydrotreated light	: No adverse effects expected Information given is based on data obtained from similar substances.
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Aspiration toxicity	: No aspiration toxicity classification.
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Further information	: Solvents may degrease the skin.

SECTION 12: Ecological information**Toxicity to fish**

Distillates (petroleum), hydrotreated light	: LL50: > 88,444 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) static test Information given is based on data obtained from similar substances.
Polymerization bottoms	LL50: > 1,000 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates

Distillates (petroleum), hydrotreated light	: EL50: > 1,000 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Method: OECD Test Guideline 202 Information given is based on data obtained from similar substances.
Polymerization bottoms	EL50: > 100 mg/l

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Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 static test Method: OECD Test Guideline 202

Toxicity to algae

Distillates (petroleum),
 hydrotreated light : EL50: > 1,000 mg/l
 Exposure time: 72 h
 Species: Pseudokirchneriella subcapitata (algae)
 Growth inhibition Method: OECD Test Guideline 201
 Information given is based on data obtained from similar
 substances.

Polymerization bottoms : EL50: > 1,000 mg/l
 Exposure time: 96 h
 Species: Selenastrum capricornutum (green algae)

Toxicity to fish (Chronic toxicity)

Distillates (petroleum),
 hydrotreated light : NOELR: > 1,000 mg/l
 Exposure time: 28 d
 Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Distillates (petroleum),
 hydrotreated light : NOELR: 1 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 semi-static test
 Method: OECD Test Guideline 211
 Information given is based on data obtained from similar
 substances.

Polymerization bottoms : NOEC: 5 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 static renewal
 Method: OECD Test Guideline 211

Biodegradability : Taking into consideration the properties of several ingredients,
 the product is estimated not to be readily biodegradable
 according to OECD classification.

Elimination information (persistence and degradability)

Bioaccumulation

Distillates (petroleum),
 hydrotreated light : This material is not expected to bioaccumulate.
 Polymerization bottoms : No data available

Mobility

Distillates (petroleum), : No data available

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hydrotreated light
Polymerization bottoms : No data available

Results of PBT assessment
Polymerization bottoms : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological
information : This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard
Distillates (petroleum),
hydrotreated light : This material is not expected to be harmful to aquatic organisms.

Polymerization bottoms : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard
Distillates (petroleum),
hydrotreated light : This material is not expected to be harmful to aquatic organisms.

Polymerization bottoms : This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR
TRANSPORTATION BY THIS AGENCY.

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IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**National legislation**

SARA 311/312 Hazards : No SARA Hazards

CERCLA Reportable Quantity : This material does not contain any components with a CERCLA RQ.

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : This material does not contain any components with a section 302 EHS TPQ.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

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SARA 313 Components : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : No components are subject to the Pennsylvania Right to Know Act.

Notification status

Europe REACH	:	Not in compliance with the inventory
Switzerland CH INV	:	Not in compliance with the inventory
United States of America (USA) TSCA	:	All substances listed as active on the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Other AIIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	Not in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).

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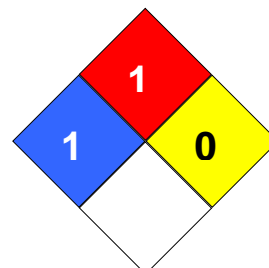
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Philippines PICCS : On the inventory, or in compliance with the inventory
 Taiwan TCSI : On the inventory, or in compliance with the inventory
 China IECSC : On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 1
 Fire Hazard: 1
 Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 630920

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a 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 material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and

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			Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		