

**Synfluid® PAO 4 cSt**

Version 1.18

Revision Date 2024-04-24

MSDS number: AA00974-0000000152

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

Product Name : Synfluid® PAO 4 cSt
Material : 1126174, 1111739, 1111738, 1111733, 1079673, 1079928,
1079872, 1079835, 1079702

Recommended use of the product : Synthetic Lubricants
Restrictions on use : None known.

Address : Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380

Address : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
C/O DONG WOO CORPORATION
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BUNDANG-GU, SEONGNAMI-SI,
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Telephone no.: +612-9186-1132

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)

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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 (Gifflinjen): +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: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726; POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;
 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.)
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 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
 Appointees : 회사명: 리이치24시코리아(주).
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SECTION 2: Hazards identification**Hazard classification**

Standards for classification and labeling of chemical substances and material safety data sheet
(ministry of employment and labor public notice No. 2020-130)

Classification

: Aspiration hazard, Category 1

Warning label elements including precautionary statements

Symbol(s)

:



Signal Word

: Danger

Hazard Statements

: H304: May be fatal if swallowed and enters airways.

Precautionary Statements

: **Response:**
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331: Do NOT induce vomiting.
Storage:
P405: Store locked up.
Disposal:
P501: Dispose of contents and container according to wastes control act.

Other hazards which do
not result in classification

: None

SECTION 3: Composition/information on ingredients

Synonyms

: Polyalphaolefin
PAO

Molecular formula

: UVCB

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Common name	Synonyms	CAS-No.	Concentration	KECI Number
1-Decene, homopolymer, hydrogenated	Dec-1-ene, oligomers, hydrogenated	68037-01-4	100%	KE-09505

SECTION 4: First aid measures

- General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
- If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

Other cautions for Doctors

- Symptoms : No information available.
- Risks : No information available.
- Treatment : No information available.

SECTION 5: Firefighting measures

- Flash point : 219°C (426°F)
Method: Cleveland Open Cup
- Autoignition temperature : 343°C (649°F)
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective : Wear self-contained breathing apparatus for firefighting if

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equipment for fire-fighters	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.
Hazardous decomposition products	: Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions	: Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

Advice on safe handling	: Do not breathe vapors/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	: Normal measures for preventive fire protection.

Secure storage

Requirements for storage areas and containers	: Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
Uses advised against	: None known.
Specific Use	: Synthetic Lubricants

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SECTION 8: Exposure controls/personal protection**Chemical exposure standards, biological exposure standards, etc.**

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 : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: Air-Purifying Respirator for Dusts and Mists / P100. A positive pressure, air-supplying respirator may be appropriate 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.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- 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.
- 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. Wear as appropriate: Protective suit. Safety shoes.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

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

Appearance

- Physical state : liquid
 Color : Clear, colorless
 Odor : Odorless

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Odor Threshold	: No data available
Melting point/freezing point	: No data available
Boiling point/boiling range	: 414°C (777°F)
Flash point	: 219°C (426°F) Method: Cleveland Open Cup
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Lower explosion limit	: No data available
Upper explosion limit	: No data available
Vapor pressure	: 1.70 MMHG at 177°C (351°F)
Relative density	: 0.82 at 15.6 °C (60.1 °F)
Autoignition temperature	: 343°C (649°F)
Viscosity, kinematic	: 16 cSt at 37.8°C (100.0°F)

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: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available.
Materials to avoid	: No data available.
Hazardous decomposition products	: Carbon oxides

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Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**Information on exposure routes****Synfluid® PAO 4 cSt**

Acute oral toxicity : LD50: > 5,000 mg/kg
Species: Rat

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Acute inhalation toxicity : LC50: > 5.2 mg/l
Exposure time: 4 h
Species: Rat
Sex: male and female
Test atmosphere: dust/mist

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Acute dermal toxicity : LD50: > 2,000 mg/kg
Species: Rat

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Skin corrosion or irritation : No skin irritation

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Eye corrosion or irritation : No eye irritation

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Respiratory Sensitization : No data available

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Skin sensitization : Did not cause sensitization on laboratory animals.

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Repeated dose toxicity : No adverse effects expected

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Germ cell mutagenicity (in vitro) : Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative

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Germ cell mutagenicity (in vivo) : Remarks: Not classified due to data which are conclusive

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vivo) although insufficient for classification., Based on data from similar materials

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Developmental Toxicity : Animal testing did not show any effects on fetal development. Information given is based on data obtained from similar substances.

Specific Target Organ Toxicity (Single Exposure)

Not classified due to data which are conclusive although insufficient for classification.
Not classified due to data which are conclusive although insufficient for classification.

Specific Target Organ Toxicity (Repeated Exposure)

Not classified due to data which are conclusive although insufficient for classification. Not classified due to data which are conclusive although insufficient for classification.

Synfluid® PAO 4 cSt Aspiration toxicity

: May be fatal if swallowed and enters airways.

CMR effects

1-Decene, homopolymer, hydrogenated

: Carcinogenicity: Not classifiable as a human carcinogen.
Mutagenicity: Animal testing did not show any mutagenic effects.
Teratogenicity: Did not show teratogenic effects in animal experiments.
Reproductive toxicity: No toxicity to reproduction

Synfluid® PAO 4 cSt Reproductive toxicity

: Animal testing did not show any effects on fertility. Based on data from similar materials

Synfluid® PAO 4 cSt Further information

: Solvents may degrease the skin.

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SECTION 12: Ecological information

Ecological Toxicity

Toxicity to fish : LC50: > 1,000 mg/l
Exposure time: 96 h
Species: Salmo gairdneri (Rainbow trout)

LC50: > 750 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates : EC50: 190 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

Toxicity to algae

1-Decene, homopolymer, hydrogenated : NOELR: 1,000 mg/l
Exposure time: 72 h
Species: Scenedesmus capricornutum (fresh water algae)
static test Method: OECD Test Guideline 201

Persistence and degradability Persistence and degradability : Expected to be inherently biodegradable.

Bioaccumulative : This material is not expected to bioaccumulate.

Mobility : No data available

Results of PBT assessment
1-Decene, homopolymer, hydrogenated : Non-classified PBT substance, Non-classified vPvB substance
Other adverse effects : No data available

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard : 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.

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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.

Disposal method : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Disposal precaution : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

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.

UN Number	:	not regulated
UN Product Shipping Name	:	Not regulated as a dangerous good
Hazard Class	:	
Packing Group	:	Not applicable
Marine Pollutant	:	Not applicable
Special Safety Measures on Mode of Transport	:	No data available

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

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

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)

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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.

Other information	:	Not applicable
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Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**National legislation****Regulation under the Occupational Safety and Health Act**

A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

Regulation	Chemical name	Threshold limits
Harmful Substances Prohibited from Manufacturing	:	Not applicable

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Harmful Substances Required Permission for Manufacture	:	Not applicable
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Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

Regulation		Chemical name	Threshold limits
Toxic Chemicals	:	Not applicable	
Prohibited Chemicals	:	Not applicable	
Restricted Chemicals	:	Not applicable	
Toxic Release Inventory	:	Not applicable	

Dangerous Substances Safety Management Act

Dangerous Substances : Flammable liquids, Type 4 petroleums
Safety Management Act

Regulations by the Waste Management Act : Not applicable

Regulations by other domestic and foreign laws

Europe REACH : On the inventory, or in compliance with the inventory
Switzerland CH INV : On the inventory, or in compliance with the inventory
United States of America (USA) : On or in compliance with the active portion of the
TSCA : TSCA inventory
Canada DSL : All components of this product are on the Canadian
DSL
Other AICS : On the inventory, or in compliance with the inventory
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : On the inventory, or in compliance with the inventory
Korea KECI : All substances in this product were registered, notified
to be registered, or exempted from registration by
CPChem through an Only Representative according to
K-REACH regulations. Importation of this product is
permitted if the Korean Importer of Record was
included on CPChem's notifications or if the Importer of
Record themselves notified the substances.
Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory
Taiwan TCSI : On the inventory, or in compliance with the inventory

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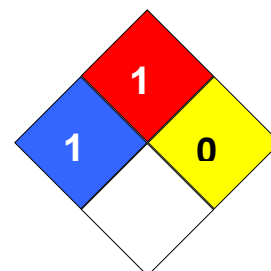
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SECTION 16: Other information

Source of data	:	Korea. GHS based classification
Date of initial writing	:	2019-10-15
Revision number	:	1
Last revision date	:	2023-12-11

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

**Other information**

None.

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%
AIIC	Australian Inventory of Industrial Chemicals	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

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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 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%	ATE	Acute toxicity estimate