PHOENIX™ Herbicide

Safety Data Sheet - GHS

1. IDENTIFICATION: CHEMICAL PRODUCT AND COMPANY

PRODUCT NAME: PHOENIX™ Herbicide
EPA REGISTRATION NUMBER: 59639-118
VC NUMBER(S): 1633
SYNONYM(S): V-10086 Herbicide
PRODUCT DESCRIPTION: Herbicide

Phoenix is a trademark of Valent U.S.A. Corporation

MANUFACTURER/DISTRIBUTOR
VALENT U.S.A. CORPORATION
P.O. Box 8025
1600 Riviera Avenue, Suite 200
Walnut Creek, CA 94596-8025

EMERGENCY TELEPHONE NUMBERS
HEALTH EMERGENCY OR SPILL (24 hr):
(800) 892-0099
TRANSPORTATION (24 hr.): CHEMTREC
(800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION
AGRICULTURAL PRODUCTS: (800) 682-5368

The current SDS is available through our website (www.valent.com), or by calling the product information numbers listed above.

2. HAZARDS IDENTIFICATION

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA-required classifications on the product label. Certain sections of this SDS are superseded by federal law under EPA FIFRA for a registered pesticide. Please see Section 15, REGULATORY INFORMATION for an explanation.

Classification - (per U.S. OSHA 29 CFR 1910.1200 (Hazcom 2012))

Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Aspiration toxicity	Category 1

Label elements

EMERGENCY OVERVIEW

Danger

Hazard statements
May be harmful in contact with skin
May cause genetic defects
May cause cancer
May be fatal if swallowed and enters airways

Precautionary statements

Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required

Response
IF exposed or concerned: Get medical advice/attention
Eyes None.
Skin None.
Inhalation None.
Ingestion IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.
FIRE None.
Spill None.

Storage
Store locked up

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
• Very toxic to aquatic life
• Very toxic to aquatic life with long lasting effects

For information on Transportation requirements see Section 14.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight/ Percent	TRADE SECRET
Lactofen	77501-63-4	24	
Total hydrocarbons	64742-94-5	21.2	
Naphthalene	91-20-3	2.11	
Others	No CAS#	53	

* The chemical name, CAS number and/or exact percentage have been withheld as a trade secret

Other ingredients, which may be maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identities are withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling **(800) 892-0099** at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

EYE CONTACT:
Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN CONTACT:
Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION:
Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

INHALATION:
Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:
Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid, which can cause pneumonitis. If ingested, probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

Flash point °F	167 - 169
FLASH POINT METHOD:	No data available

NFPA RATING:

Health:	1
Flammability:	2
Reactivity:	0
Special:	None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

FIRE FIGHTING INSTRUCTIONS: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85 degrees F.

Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse.

6. ACCIDENTAL RELEASE MEASURES

VALENT EMERGENCY PHONE NUMBER: (800) 892-0099
CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300
OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION
Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

UN/NA NUMBER: Not applicable **EMERGENCY RESPONSE GUIDEBOOK NO.:** Not applicable

FOR SPILLS ON LAND:

CONTAINMENT: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

FOR SPILLS IN WATER:

CONTAINMENT: This material forms an emulsion in water. Stop or reduce contamination of any water. Isolate contaminated water.

CLEANUP: Remove contaminated water for treatment or disposal.

7. HANDLING AND STORAGE

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

HANDLING:

Keep pesticide in original container. Do not store or transport near food or feed. Do not contaminate food or feed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers.

DO NOT USE OR STORE near flame, sparks or hot surfaces. Use only in well ventilated area. Keep container closed.

DO NOT weld, heat or drill container. Replace cap or bung. Emptied container still contains hazardous or explosive vapor or liquid.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

STORAGE:

Keep in original container. Do not store at temperatures below 32ºF. If the product is exposed to temperatures below 32ºF, thaw at room temperature to 50ºF or warmer and shake gently to unify the product. Store in a cool, dry place, out of direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

EYES & FACE: Appropriate eye protection must be worn when working with this material or serious harm can result. Wear protective eyewear.

RESPIRATORY PROTECTION: This material may be a respiratory irritant and, unless ventilation is adequate, the use of approved respiratory protection is recommended. Use this material only in well ventilated areas.

SKIN & HAND PROTECTION: Avoid contact with skin or clothing. Skin contact can be minimized by wearing protective clothing including gloves.

EXPOSURE LIMITS

Chemical Name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Lactofen	None	None	None
Total hydrocarbons	100 mg/m³ TWA (17 ppm) TWA	None	None
Naphthalene	10 ppm TWA, 15 ppm STEL skin - potential for absorption	10 ppm TWA,15 ppm STEL 50 mg/m³ TWA, 75 mg/m³ STEL	None
Others	Not known	Not known	Not known

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid		
Appearance	No information available	**Odor**	Aromatic
Color	Brown	**Odor threshold**	No information available

PROPERTIES	Values	Remarks • Method
pH	6.0	1% emulsion
Melting point/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash point	167 - 169	
Evaporation rate	No information available	

Flammability (solid, gas)	No information available
Flammability Limits in Air	
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	No information available
Water solubility	Emulsifiable
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No data available
Explosive properties	No information available
Oxidizing properties	No information available
Density	8.23 lb/gal @ 20° C
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

There is no toxicology information available for this product. The information provided is based on studies done with a product formulated with the 72-78% technical grade material.

Oral Toxicity LD_{50} (rats)	500-5000 mg/kg	EPA Tox Category	III
Dermal Toxicity LD_{50} (rabbits)	2000-5000 mg/kg	EPA Tox Category	III
Inhalation Toxicity LC_{50} (rats)	>2 mg/L	EPA Tox Category	IV
Eye Irritation (rabbits)	Brief and/or minor irritation	EPA Tox Category	III

Skin Irritation (rabbits)	Moderately irritating	EPA Tox Category	III
Skin Sensitization (guinea pigs)	Potential sensitizer	EPA Tox Category	Not applicable

CARCINOGEN CLASSIFICATION

Chemical Name	IARC	OSHA - Select Carcinogens	NTP Carcinogen List
Lactofen	Not listed	Not listed	Not listed
Total hydrocarbons	Not listed	Not listed	Not listed
Naphthalene	Monograph 82 [2002] Group 2B Reasonably Anticipated To Be A Human Carcinogen	Carcinogen	Suspect Carcinogen
Others	Not Known	Not listed	Not known

TOXICITY OF LACTOFEN TECHNICAL

SUBCHRONIC: Histopathological changes in the liver, significant changes in clinical chemistry associated with the liver and hematological changes were observed in rats exposed to 1000 ppm of Lactofen Technical for 90 days. The NOEL in this study was 200 ppm. In a 90-day study in mice, the LOEL for Lactofen Technical was 200 ppm based on hematology and clinical chemistry changes, various organ weight effects and histopathological changes of the liver, kidney, thymus, spleen, ovaries and testes.

CHRONIC/CARCINOGENICITY: In an 18-month oncogenicity study in mice a statistically significant increase in liver adenomas and carcinomas was observed at 250 ppm in both sexes. The lowest dose, 10 ppm, was the LOEL with increased liver weight and hepatocytomegally. In a 2-year rat chronic feeding/oncogenicity study liver neoplastic nodules and foci of cellular alteration were observed in both sexes at 2000 ppm. The NOEL for systemic toxicity was 500 ppm based on kidney and liver pigmentation. Research studies indicate that Lactofen Technical is a peroxisome proliferating agent that induces liver tumors through a non-genotoxic mechanism and is unlikely to be carcinogenic to humans at low doses. In a 1-year feeding study of Lactofen Technical with dogs, the NOEL is 200 ppm and the LOEL is 1000/3000 ppm based on renal dysfunction, hematology and clinical chemistry changes.

DEVELOPMENTAL TOXICITY: Pregnant rats were administered oral doses of 15, 50 and 150 mg/kg/day Lactofen Technical on days 6-19 of gestation. Maternal and developmental toxicity were observed at 150 mg/kg/day. The NOEL for this study was 50 mg/kg/day. Two developmental toxicity studies on Lactofen Technical were conducted in rabbits. In the first study, pregnant rabbits were administered oral doses of 5, 15 or 50 mg/kg/day of Lactofen Technical on days 6-18 of gestation. Maternal toxicity and developmental effects were observed at 15 and 50 mg/kg/day. In the second study, pregnant rabbits were exposed to 1, 4 or 20 mg/kg/day oral doses on days 6-18 of gestation. Maternal toxicity was observed at 20 mg/kg/day, while no developmental effects were observed at this dose.

REPRODUCTION: Groups of male and female rats were administered 50, 500 or 2000 ppm of Lactofen Technical continuously for two generations. Adult systemic toxicity and reproductive toxicity were observed at levels of 500 ppm and greater. The NOEL for both systemic and reproductive toxicity was 50 ppm.

MUTAGENICITY: The following mutagenicity studies with Lactofen Technical were negative: unscheduled DNA synthesis, chromosomal aberration, DNA repair assay and one Ames assay. A second Ames assay was positive. Lactofen Technical is not considered a genetic hazard.

TOXICITY OF OTHER INGREDIENTS:

This product contains a solvent. Solvents, when inhaled, can cause nasal and respiratory irritation and central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possibly unconsciousness and even death. Ingestion of solvents can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged or repeated dermal exposures may cause drying, scaling and even blistering of the skin. Aspiration of low viscosity products can cause chemical pneumonitis which can be fatal. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Symptoms include fatigue, concentration difficulties, anxiety, depression, rapid mood swings and short-term memory loss. The reports are not clear with regard to the types of solvents that may cause these symptoms, and there is controversy amoung scientists to whether the condition exists or is caused by this type of product. Since many other diseases cause some or all of these conditions, a doctor should be consulted if any appear. Acute exposure to naphthalene by inhalation, ingestion, and dermal contact has been associated with hemolytic anemia, damage to the kidneys, cataracts, and, in infants, brain damage. There is limited evidence of fetal and maternal toxicity from exposure to naphthalene.

Chronic (long-term) exposure of workers and rodents to naphthalene has been reported to cause cataracts and damage to the retina. Lesions in the kidneys and thymus, signs of anemia, and reduced spleen weights have been observed in rats and mice chronically exposed via gavage. A National Toxicology Program (NTP) report states that lifetime inhalation exposure to naphthalene resulted in increases in tumors of the nose in rats. In another NTP study, lifetime inhalation exposure to naphthalene increased lung tumors in female mice. The relevance of the rodent findings to humans is unknown. Naphthalene has been listed by the International Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B).

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

12. ECOLOGICAL INFORMATION

AVIAN TOXICITY: The following results were obtained from studies with Lactofen Technical:
LD_{50} quail: greater than 2510 mg/kg
LC_{50} duck: greater than 5620 ppm
LC_{50} quail: greater than 5620 ppm

AQUATIC ORGANISM TOXICITY: The following effects were noted in studies with Lactofen Technical:
96-hour LC_{50} bluegill sunfish: greater than 100 ppb
96-hour LC_{50} rainbow trout: greater than 100 ppb
48-hour LC_{50} Daphnia magna: 2.0 ppm
Fish early life stage toxicity (sheepshead minnow):
MATC (Maximum Allowable Toxicant Concentration) greater than 0.78 ppm but less than 1.6 ppm
The maximum solubility of Lactofen Technical is 100 ppb

OTHER NON-TARGET ORGANISM TOXICITY: Lactofen Technical is practically nontoxic to bees with an acute topical LD50 of greater than 160 µg/bee.

OTHER ENVIRONMENTAL INFORMATION:
This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PRODUCT DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed by use according to label instruction, contact your State Pesticide Agency or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Non-refillable container. Do not reuse or refill this container. Triple rinse as follows: Empty the remaining contents into mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities by burning. If burned, stay out of smoke.

DISPOSAL METHODS: Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

14. TRANSPORTATION INFORMATION

DOT (ground) SHIPPING NAME:	NA 1993, Combustible liquid, N.o.s. (Naphthalene), 3 III
REMARKS:	In NON-BULK containers (< 119 ga capacity), not regulated for ground transport. See exception 49CFR 173.150(f) In containers larger than 520 ga, Naphthalene is Reportable Quantity - add "RQ" to description. "Combustible Liquid" is regulated only by US DOT - see 49CFR 173.120(b)
EMERGENCY RESPONSE GUIDEBOOK NO.:	128
ICAO/IATA SHIPPING NAME:	Not regulated.
REMARKS:	Flash point 167° F = not flammable per UN Model Regulations
IMDG SHIPPING NAME:	Not regulated
REMARKS:	Flash point 167° F = not flammable per UN Model Regulations
EMS NO.:	N/A

15. REGULATORY INFORMATION

EPA-FIFRA LABEL INFORMATION THAT DIFFERS FROM OSHA-GHS REQUIREMENTS:

This material is a pesticide product registered by the EPA under FIFRA and is subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required by OSHA GHS for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the FIFRA pesticide label:

- ***EPA FIFRA SIGNAL WORD: CAUTION***
- ***Harmful if swallowed, inhaled or absorbed through skin.***
- ***Combustible***
- ***This product may pose an aspiration pneumonia hazard. Do not induce vomiting. Contains petroleum*** *distillate.*
- ***May cause allergic reaction***
- ***Avoid breathing vapors or spray.***
- ***Avoid contact with eyes, skin and clothing***
- ***Keep out of reach of children.***

PESTICIDE REGULATIONS: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

U.S. FEDERAL REGULATIONS: Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Lactofen	
SARA 313 Chemicals	1.0% de minimis concentration
Total hydrocarbons	
TSCA Inventory List -	Present
Naphthalene	
TSCA Inventory List -	Present
Clean Water Act - Hazardous Substances	Present
Clean Water Act Section 307	Present
SARA 313 Chemicals	0.1% de minimis concentration
CERCLA Reportable Quantity (RQ):	100 lb (45.4 kg)

Product Reportable Quantity (RQ): 304 gallons (naphthalene RQ = 100 lb)

SARA (311, 312):

Immediate Health:	Yes
Chronic Health:	Yes
Fire:	Yes
Sudden Pressure:	No
Reactivity:	No

STATE REGULATIONS: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 8 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Lactofen	
California Proposition 65	carcinogen
NJ Right To Know	3550
Naphthalene	
California Proposition 65	carcinogen

California - Directors List of Hazardous Substances	Present
MA Right To Know	Present
NJ Right To Know	1322 3758
PA Right To Know	Environmental hazard
RI Right To Know	Listed
MN Hazardous Substance	Present Carcinogen

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

16. OTHER INFORMATION

REASON FOR ISSUE:	Updated information to meet OSHA Hazcom 2012 (GHS) regulations.
SDS NO.:	0116
EPA REGISTRATION NUMBER:	59639-118
REVISION NUMBER:	2
REVISION DATE:	09/30/2015
SUPERCEDES DATE:	06/02/2014
RESPONSIBLE PERSON(S):	Valent U.S.A. Corporation, Corporate EH&S, (925) 256-2803

The information provided in this Safety Data Sheet (SDS) is provided in good faith and believed to be accurate at the time of preparation of the SDS. However, to the extent consistent with applicable law, Valent U.S.A. Corporation and its subsidiaries or affiliates extend no warranties, make no representations, and assume no responsibility as to the acccuracy, suitability, or completeness of such information. Additionally, to the extent consistent with applicable law, neither Valent U.S.A. Corporation nor any of its subsidiaries or affiliates represents or guarantees that this information or product may be used without infringing the intellectual property rights of others. Except to the extent a particular use and particular information are expressly stated on the product label, it is the users' own responsibility to determine the suitability of this information for their own particular use of this product. If necessary, contact Valent U.S.A. Corporation to confirm that you have the most current product label and SDS.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABEL (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom").

The product label provides information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products is regulated by the EPA under the authority of FIFRA through the proudct label. All necessary hazard classification and appropriate precautionary use, storage, and disposal information is set forth on that label or labeling accompanying the pesticide or to which reference is made on the label. It is a violation of federal law to use an EPA-registered pesticide product in any manner inconsistent with its labeling.