

Safety Data Sheet
acc. to OSHA HCS (29 CFR 1910.1200)


Printing date: 01/20/2016

Revision: 01/20/2016

1 Identification

- **Product identifier**
- **Trade name:** NCS-100
- **CAS Number:**
5989-27-5
- **Other means of identification:** d-limonene
- **Recommended use and restriction on use**
- **Recommended use:** Industrial uses.
- **Restrictions on use:** See Sections 8 and 10 for further information.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
DYNACCO, INC.
17461 147th ST SE (Physical)
PO Box 27 (Mailing)
Monroe WA 98272 USA
Tel: 360-794-8974
- **Emergency telephone number:**
ChemTel Inc.
+1 (800)255-3924, +1 (813)248-0585

2 Hazard(s) identification

- **Classification of the substance or mixture**
Flam. Liq. 3 H226 Flammable liquid and vapor.
Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.
- **Label elements**
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**

GHS02 GHS07 GHS08
- **Signal word:** Danger
- **Hazard-determining components of labeling:**
d-Limonene
- **Hazard statements:**
H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H304 May be fatal if swallowed and enters airways.
- **Precautionary statements:**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

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P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P261	Avoid breathing mist, vapors, or spray.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection.
P240	Ground/bond container and receiving equipment.
P233	Keep container tightly closed.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P272	Contaminated work clothing must not be allowed out of the workplace.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P370+P378	In case of fire: Use foam, powder, or carbon dioxide for extinction.
P363	Wash contaminated clothing before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P331	Do NOT induce vomiting.
P405	Store locked up.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
5989-27-5 d-Limonene

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Take affected persons out into the fresh air.
- **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
Allergic reactions

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Irritant to skin and mucous membranes.

Dizziness

Breathing difficulty

Gastric or intestinal disorders

- **Danger:**

Danger of impaired breathing.

Repeated exposure may cause skin dryness or cracking.

May be fatal if swallowed and enters airways.

May cause drowsiness or dizziness.

- **Indication of any immediate medical attention and special treatment needed:**

If swallowed, gastric irrigation with added, activated carbon.

If swallowed or in case of vomiting, danger of entering the lungs.

If necessary oxygen respiration treatment.

Later observation for pneumonia and pulmonary edema.

Contains d-limonene. May produce an allergic reaction.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

Water fog / haze

Foam

Alcohol resistant foam

Fire-extinguishing powder

Carbon dioxide

Sand

- **For safety reasons unsuitable extinguishing agents:** Water stream.

- **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

- **Additional information:**

Eliminate all ignition sources if safe to do so.

Cool endangered receptacles with water fog.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Keep away from ignition sources.

Protect from heat.

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- **Environmental precautions:**

Avoid release to the environment.
Prevent from spreading (e.g. by damming-in or oil barriers).

- **Methods and material for containment and cleaning up:**

Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

- **Reference to other sections:**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**

- **Precautions for safe handling:**

Prevent formation of aerosols.

Use only in well ventilated areas.

Avoid splashes or spray in enclosed areas.

Keep away from heat and direct sunlight.

Rags, metal wools / cuttings / shavings and waste papers soaked with product must be placed in a sealed metal container rated for flammable waste.

- **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Flammable gas-air mixtures may be formed in empty containers/receptacles.

The product forms flammable fumes when heated.

- **Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and receptacles:**

Provide ventilation for receptacles.

Avoid storage near extreme heat, ignition sources or open flame.

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from oxidizing agents.

- **Further information about storage conditions:**

Keep containers tightly sealed.

Protect from heat and direct sunlight.

- **Specific end use(s):** No relevant information available.

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
- **Engineering controls:** No relevant information available.
- **Breathing equipment:**
Not required under normal conditions of use.
Use suitable respiratory protective device in case of insufficient ventilation.
Use suitable respiratory protective device when aerosol or mist is formed.
NIOSH or EN approved organic vapor respirator equipped with a dust/mist prefilter should be used.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**
Nitrile rubber, NBR
Neoprene gloves
- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
No relevant information available.
- **Risk management measures** See Section 7 for additional information.

9 Physical and chemical properties

· Information on basic physical and chemical properties

- **Appearance:**
 - Form:** Liquid
 - Color:** Clear to straw color.
- **Odor:** Citrus.
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Melting point/Melting range:** -96 °C (-141 °F)
- **Boiling point/Boiling range:** 176 °C (349 °F)

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· Flash point:	48 °C (118 °F)
· Flammability (solid, gaseous):	Not applicable.
· Auto-ignition temperature:	237 °C (459 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits	
Lower:	0.7 Vol %
Upper:	6.1 Vol %
· Vapor pressure at 25 °C (77 °F):	1.98 mmHg
· Density at 20 °C (68 °F):	0.84 g/cm ³ (7.01 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	4.7 (air = 1)
· Evaporation rate:	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Other information	No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions:**
Flammable.
Used empty containers may contain product gases which form explosive mixtures with air.
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.
Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid:** Excessive heat.
- **Incompatible materials:** Oxidizers
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

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11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

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Oral	LD50	4400 mg/kg (rat)

- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Sensitization possible through skin contact.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer):**

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- **NTP (National Toxicology Program):**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

Substance is not listed.

- **Probable route(s) of exposure:**

Inhalation.

Eye contact.

Skin contact.

Ingestion.

- **Acute effects (acute toxicity, irritation and corrosivity):**

Irritating to skin.

May be fatal if swallowed and enters airways.

- **Repeated dose toxicity:** Repeated exposures may result in skin and/or respiratory sensitivity.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** May be fatal if swallowed and enters airways.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** Toxic for aquatic organisms
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish

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- **Additional ecological information**

- **General notes:**

Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.

Avoid release to the environment.

- **Other adverse effects:** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Can be reused after reprocessing.

Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

- **Uncleaned packagings**

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**

- **DOT**

Not regulated.

Reclassified as combustible under US DOT regulations. Labeling is only required for single packages ≥ 119 US gal / 450 L to include Combustible symbol and Proper Shipping Name.

- **ADR, IMDG, IATA**

UN2319

- **UN proper shipping name**



Limited Quantity for packages less than 30 kg (66 lb) and inner packagings less than 5 L (1.3 gal).

- **DOT**

Not regulated.

- **ADR**

2319 TERPENE HYDROCARBONS, N.O.S. (d-limonene), ENVIRONMENTALLY HAZARDOUS TERPENE HYDROCARBONS, N.O.S. (D-LIMONENE), MARINE POLLUTANT

- **IMDG**

- **IATA**

Terpene hydrocarbons, n.o.s. (d-limonene)

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· **Transport hazard class(es)**

· DOT
· Class Not regulated.

· **ADR**



· Class 3 (F1) Flammable liquids
· Label 3

· **IMDG**



· Class 3 Flammable liquids
· Label 3

· **IATA**



· Class 3 Flammable liquids
· Label 3

· **Packing group**

· DOT Not regulated.
· ADR, IMDG, IATA III

· **Environmental hazards**

· Marine pollutant: Yes
Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable liquids
· Danger code (Kemler): 30
· EMS Number: F-E,S-D

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

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15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- United States (USA)
- SARA

· Section 302 (extremely hazardous substances):

Substance is not listed.

· Section 304 (emergency release notification):

Substance is not listed.

· Sections 311/312 (hazardous chemical threshold planning quantity in pounds):

Substance is not listed.

· Section 355 (extremely hazardous substances):

Substance is not listed.

· Section 313 (Specific toxic chemical listings):

Substance is not listed.

· TSCA (Toxic Substances Control Act)

Substance is listed.

· Proposition 65 (California)

· Chemicals known to cause cancer:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

· Chemicals known to cause developmental toxicity:

Substance is not listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency):

Substance is not listed.

· IARC (International Agency for Research on Cancer):

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· NIOSH-Ca (National Institute for Occupational Safety and Health):

Substance is not listed.

· Canadian substance listings

· Canadian Domestic Substances List (DSL):

Substance is listed.

· Canadian Ingredient Disclosure list (limit 0.1%):

Substance is not listed.

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· **Canadian Ingredient Disclosure list (limit 1%):**

Substance is listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 01/20/2016 / -

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Asp. Tox. 1: Aspiration hazard, Hazard Category 1

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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