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INDEX: D50271021 CAT NO: AC161150050 PO NBR: 28375A

**** MATERIAL SAFETY DATA SHEET ****

N,N-Dimethylformamide dineopentyl acetal, 99%
46517

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: N,N-Dimethylformamide dineopentyl acetal, 99%
Catalog Numbers:

AC161150000, AC161150050, AC161150100, AC161150500

Synonyms:

1,1-Dineopentyltrimethylamine

Company Identification (Europe): Acros Organics BVBA
Janssen Pharmaceuticaal 3a
2440 Geel, Belgium

Company Identification (USA): Acros Organics
One Reagent Lane
Fairlawn, NJ 07410

For information in North America, call: 800-ACROS-01
For information in Europe, call: 0032(0) 14575211
For emergencies in the US, call CHEMTREC: 800-424-9300
For emergencies in Europe, call: 0032(0) 14575299

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
4909-78-8	N,N-Dimethylformamide dineopentyl acet	99	225-536-4

Hazard Symbols: XI
Risk Phrases: 10 36/37/38

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: colorless to slight yellow clear liquid. Flash Point: 51 deg C.
Warning! Flammable liquid and vapor. Causes respiratory tract
irritation. May cause digestive tract irritation. Moisture
sensitive. The toxicological properties of this material have not
been fully investigated. Causes eye and skin irritation.
Target Organs: None known.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and
diarrhea. The toxicological properties of this substance have not
been fully investigated.

Inhalation: Causes respiratory tract irritation. The toxicological properties of
this substance have not been fully investigated. Vapors may cause
dizziness or suffocation.

Chronic: No information found.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes,
occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at
least 15 minutes while removing contaminated clothing and shoes.
Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical
aid. DO NOT induce vomiting. If conscious and alert, rinse mouth and
drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not
breathing, give artificial respiration. If breathing is difficult,
give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in
pressure-demand, MSHA/NIOSH (approved or equivalent), and full
protective gear. Vapors may form an explosive mixture with air.
Vapors can travel to a source of ignition and flash back. During a
fire, irritating and highly toxic gases may be generated by thermal
decomposition or combustion. Will burn if involved in a fire. Use
water spray to keep fire-exposed containers cool. Water may be

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ineffective. Material is lighter than water and a fire may be spread
by the use of water. Containers may explode in the heat of a fire.
Flammable liquid and vapor. Vapors may be heavier than air. They
can spread along the ground and collect in low or confined areas.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or
alcohol-resistant foam. For large fires, use water spray, fog, or
alcohol-resistant foam. Use water spray to cool fire-exposed
containers. Water may be ineffective. Do NOT get water inside
containers. Do NOT use straight streams of water. Use water spray,
dry chemical, carbon dioxide, or appropriate foam.

Autoignition Temperature: Not applicable.

Flash Point: 51 deg C (123.80 deg F)

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

NEPA Rating: (estimated) Health: 1; Flammability: 2; Instability: 0

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated
in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth),
then place in suitable container. Clean up spills immediately,
observing precautions in the Protective Equipment section. Remove all
sources of ignition. Use a spark-proof tool. Provide ventilation. Do
not get water inside containers. A vapor suppressing foam may be
used to reduce vapors.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Ground and bond containers when transferring material. Use
spark-proof tools and explosion proof equipment. Avoid breathing
dust, vapor, mist, or gas. Avoid contact with eyes, skin, and
clothing. Empty containers retain product residue, (liquid and/or
vapor), and can be dangerous. Keep container tightly closed. Avoid
contact with heat, sparks and flame. Avoid ingestion and inhalation.
Do not allow contact with water. Use only in a chemical fume hood.
Wash clothing before reuse. Do not pressurize, cut, weld, braze,
solder, drill, grind, or expose empty containers to heat, sparks or
open flames. Keep from contact with moist air and steam.

Storage:

Keep away from heat, sparks, and flame. Keep away from sources of
ignition. Store in a tightly closed container. Store in a cool, dry,
well-ventilated area away from incompatible substances.
Flammables-area. Store protected from moisture.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Facilities storing or utilizing this material should be equipped
with an eyewash facility and a safety shower. Use adequate general or
local explosion-proof ventilation to keep airborne levels to
acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
N,N-Dimethylformami de dineopentyl acet al	none listed	none listed	none listed

OSHA Vacated PELs:

N,N-Dimethylformamide dineopentyl acetal:
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical
safety goggles as described by OSHA's eye and face
protection regulations in 29 CFR 1910.133 or European
Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin
exposure.

Clothing:

Wear appropriate protective clothing to prevent skin
exposure.

Respirators:

A respiratory protection program that meets OSHA's 29
CFR 1910.134 and ANSI Z88.2 requirements or European
Standard EN 149 must be followed whenever workplace
conditions warrant a respirator's use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

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Physical State: Clear liquid
Color: colorless to slight yellow
Odor: No known strong odors.
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: 7.98
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 85 - 87 deg C @ 10.00mm Hg
Freezing/Melting Point: Not available.
Decomposition Temperature:
Solubility in water:
Specific Gravity/Density: .8290g/cm3
Molecular Formula: C13H29NO2
Molecular Weight: 231.38

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, ignition sources, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials:
Moisture, acids, strong oxidizing agents.
Hazardous Decomposition Products:
Hydrogen cyanide, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#: CAS# 4909-78-8 unlisted.
LD50/LC50: Not available.
Carcinogenicity:
N,N-Dimethylformamide dineopentyl acetal -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
Teratogenicity:
No information available.
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Other Studies:
No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.
US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: FLAMMABLE LIQUID, N.O.S.*
Hazard Class: 3
UN Number: 1993
Packing Group: III
Canadian TDG
No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL
TSCA
CAS# 4909-78-8 is not listed on the TSCA inventory.
It is for research and development use only.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b

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None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
N,N-Dimethylformamide dineopentyl acetal is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XI
Risk Phrases:
R 10 Flammable.
R 36/37/38 Irritating to eyes, respiratory system and skin.
Safety Phrases:
S 9 Keep container in a well-ventilated place.
S 16 Keep away from sources of ignition - No smoking.
S 33 Take precautionary measures against static discharges.
WGK (Water Danger/Protection)
CAS# 4909-78-8: No information available.
United Kingdom Occupational Exposure Limits
United Kingdom Maximum Exposure Limits
Canada
None of the chemicals in this product are listed on the DSL/NDL list.
WHMIS: Not available.
CAS# 4909-78-8 is not listed on Canada's Ingredient Disclosure List.
Exposure Limits

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 3/19/1999 Revision #2 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.