MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

SECTION 1. IDENTIFICATION

Product name : MOLYKOTE™ 7415 Thinner

Product code : 04094208

Manufacturer or supplier's details

Company Identification : DDP SPECIALTY ELECTRONIC MATERIALS

US 9, LLC

2200 WEST SALZBURG ROAD MIDLAND MI 48686-0994

UNITED STATES

Telephone : 833-338-7668

24-Hour Emergency Contact : 1-800-424-9300

Local Emergency Number : 800-424-9300

E-mail address : SDSQuestion-NA@dupont.com

Recommended use of the chemical and restrictions on use

Recommended use : Solvent

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 4

Serious eye damage : Category 1

Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms





Signal Word : Danger

Hazard Statements : H227 Combustible liquid.

H318 Causes serious eye damage. H360D May damage the unborn child.

Precautionary Statements : Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read

and understood.

P210 Keep away from heat/sparks/open flames/hot surfaces.

MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

No smoking.

P280 Wear protective gloves/ protective clothing/ eye protection/

face protection.

Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON

CENTER/doctor.

P308 + P313 IF exposed or concerned: Get medical advice/

attention.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste dis-

posal plant.

Other hazards

Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Chemical nature : Organic solvent

Substance name : N-Ethyl-2-pyrrolidone

CAS-No. : 2687-91-4

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
N-Ethyl-2-pyrrolidone	2687-91-4	100

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical

advice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty

of water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

wash clothing before reuse.

Thoroughly clean shoes before reuse.

MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

In case of eye contact : In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention immediately.

If swallowed : If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and

delayed

Causes serious eye damage. May damage the unborn child.

Protection of first-aiders : First Aid responders should pay attention to self-protection,

and use the recommended personal protective equipment

when the potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

High volume water jet

Specific hazards during fire

fighting

Do not use a solid water stream as it may scatter and spread

fire.

Flash back possible over considerable distance. Vapors may form explosive mixtures with air.

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod-

ucts

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment:

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emer-

Remove all sources of ignition.
Use personal protective equipment.

MOLYKOTE™ 7415 Thinner



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 03/18/2017

 4.0
 10/16/2018
 1779834-00009
 Date of first issue: 04/03/2015

gency procedures Follow safe handling advice and personal protective

equipment recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g., by containment or

oil barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

Methods and materials for containment and cleaning up

Non-sparking tools should be used.

Soak up with inert absorbent material.

Suppress (knock down) gases/vapors/mists with a water spray

jet.

For large spills, provide diking or other appropriate

containment to keep material from spreading. If diked material

can be pumped, store recovered material in appropriate

container.

Clean up remaining materials from spill with suitable

absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items

employed in the cleanup of releases. You will need to

determine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use with local exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.

Do not breathe vapors or spray mist.

Do not swallow.

Do not get in eyes.

Handle in accordance with good industrial hygiene and safety

practice, based on the results of the workplace exposure

assessment

Keep container tightly closed.

Keep away from heat and sources of ignition.

Take precautionary measures against static discharges.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage : Keep in properly labeled containers.

Store locked up.

Keep tightly closed.

Keep in a cool, well-ventilated place.

Store in accordance with the particular national regulations.

Keep away from heat and sources of ignition.

MOLYKOTE™ 7415 Thinner



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 03/18/2017

 4.0
 10/16/2018
 1779834-00009
 Date of first issue: 04/03/2015

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents Organic peroxides

Explosives Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

Ingredients	CAS-No.
N-Ethyl-2-pyrrolidone	2687-91-4

Engineering measures : Minimize workplace exposure concentrations.

Use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where

concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn.

Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided

by air purifying respirators against exposure to any

hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled

release, exposure levels are unknown, or any other

circumstance where air purifying respirators may not provide

adequate protection.

Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending

on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the

product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Chemical resistant goggles must be worn.

If splashes are likely to occur, wear:

Face-shield

MOLYKOTE™ 7415 Thinner



Version **Revision Date:** SDS Number: Date of last issue: 03/18/2017 10/16/2018 1779834-00009 Date of first issue: 04/03/2015 4.0

Skin and body protection Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Wear the following personal protective equipment: Flame retardant antistatic protective clothing, unless assessment demonstrates that the risk of explosive

atmospheres or flash fires is low

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures Ensure that eye flushing systems and safety showers are

> located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may

require added precautions.

For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Dow Chemical customer service group.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance liquid

Color Colorless to pale yellow

Odor characteristic

Odor Threshold No data available

No data available pΗ

Melting point/freezing point No data available

Initial boiling point and boiling

range

213 °C

90.5 °C Flash point

Method: closed cup

Evaporation rate No data available

Flammability (solid, gas) Not applicable

Flammability (liquids) Not applicable

Self-ignition The substance or mixture is not classified as pyrophoric. The

substance or mixture is not classified as self heating.

MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : 0.9974

Solubility(ies)

Water solubility : No data available

Partition coefficient: n-

octanol/water

No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : < 20.5 mm²/s (25 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

Particle size : Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

Combustible liquid.

Vapors may form explosive mixture with air. Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

No hazardous decomposition products are known.

MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: 3,200 mg/kg

Method: Calculation method

Ingredients:

N-Ethyl-2-pyrrolidone:

Acute oral toxicity : LD50 (Rat): 3,200 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

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

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal

toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients:

N-Ethyl-2-pyrrolidone:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Ingredients:

N-Ethyl-2-pyrrolidone:

Species: Rabbit

Result: Irreversible effects on the eye Method: OECD Test Guideline 405

MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients:

N-Ethyl-2-pyrrolidone:

Test Type: Local lymph node assay (LLNA)

Routes of exposure: Skin contact

Species: Mouse

Method: OECD Test Guideline 429

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

N-Ethyl-2-pyrrolidone:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Ingestion

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

Not classified based on available information.

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.

OSHA No component of this product present at levels greater than or

equal to 0.1% is on OSHA's list of regulated carcinogens.

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.

Reproductive toxicity

May damage the unborn child.

Ingredients:

N-Ethyl-2-pyrrolidone:

Effects on fetal development : Test Type: Embryo-fetal development

MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

Species: Rabbit

Application Route: Ingestion Method: OECD Test Guideline 414

Result: positive

Reproductive toxicity - As-

sessment

Clear evidence of adverse effects on development, based on

animal experiments.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients:

N-Ethyl-2-pyrrolidone:

Species: Rat

NOAEL: 100 mg/kg

Application Route: Ingestion Exposure time: 3 Months

Method: OECD Test Guideline 408

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

N-Ethyl-2-pyrrolidone:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 464 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 104 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae : NOEC (Desmodesmus subspicatus (green algae)): > 101 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to daphnia and other :

aquatic invertebrates (Chronic toxicity)

NOEC (Daphnia magna (Water flea)): 12.5 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

Remarks: Based on data from similar materials

MOLYKOTE™ 7415 Thinner



Version **Revision Date:** SDS Number: Date of last issue: 03/18/2017 10/16/2018 1779834-00009 Date of first issue: 04/03/2015 4.0

Persistence and degradability

Ingredients:

N-Ethyl-2-pyrrolidone:

Biodegradability Result: Readily biodegradable.

Biodegradation: 90 - 100 %

Exposure time: 28 d

Method: OECD Test Guideline 301A

Bioaccumulative potential

Ingredients:

N-Ethyl-2-pyrrolidone:

Partition coefficient: n-

octanol/water

: log Pow: -0.2

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Resource Conservation and

Recovery Act (RCRA)

This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded

in its purchased form.

Waste from residues Dispose of in accordance with local regulations.

Empty containers should be taken to an approved waste Contaminated packaging

handling site for recycling or disposal.

Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or

death.

If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

Not regulated as a dangerous good

IMDG-Code

MOLYKOTE™ 7415 Thinner



Version Revision Date: SDS Number: Date of last issue: 03/18/2017 4.0 10/16/2018 1779834-00009 Date of first issue: 04/03/2015

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number : NA 1993

Proper shipping name : Combustible liquid, n.o.s.

(N-Ethyl-2-pyrrolidone)

Class : CBL
Packing group : III
Labels : None
ERG Code : 128
Marine pollutant : no

Remarks : Above applies only to containers over 119 gallons or 450

liters. Not regulated if shipped in packages less than or equal

to 119 gallons (450 liters).

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

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

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)

Serious eye damage or eye irritation

Reproductive toxicity

SARA 313 : 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.

US State Regulations

Pennsylvania Right To Know

N-Ethyl-2-pyrrolidone 2687-91-4

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

NZIoC : All ingredients listed or exempt.

REACH : For purchases from Dow Chemical EU legal entities, all

ingredients are currently pre/registered or exempt under

MOLYKOTE™ 7415 Thinner



version 4.0	10/16/2018	1779834-00009	Date of first issue: 04/03/2015
		REACH. Please	e refer to section 1 for recommende

REACH. Please refer to section 1 for recommended uses. For purchases from non-EU Dow Chemical legal entities with the intention to export into EEA please contact your DC

representative/local office.

TSCA : All chemical substances in this product are either listed on the

TSCA Inventory or are in compliance with a TSCA Inventory

exemption.

IECSC : All ingredients listed or exempt.

ENCS/ISHL : All components are listed on ENCS/ISHL or exempted from

inventory listing.

KECI : All ingredients listed, exempt or notified.

PICCS : All ingredients listed or exempt.

DSL : All chemical substances in this product comply with the CEPA

1999 and NSNR and are on or exempt from listing on the

Canadian Domestic Substances List (DSL).

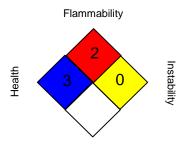
AICS : Consult your local Dow Chemical office.

TCSI : All ingredients listed or exempt.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



Special hazard.

HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the

MOLYKOTE™ 7415 Thinner



Version **Revision Date:** SDS Number: Date of last issue: 03/18/2017 10/16/2018 1779834-00009 Date of first issue: 04/03/2015 4.0

German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR -No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB -Very Persistent and Very Bioaccumulative

Sources of key data used to

compile the Material Safety **Data Sheet**

Revision Date

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

10/16/2018

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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