Safety Data Sheet

Material Name: SAFETY-KLEEN DIMETHYLFORMAMIDE (RECYCLED) **SDS ID: 82722**

* * * Section 1 - Identification * * *

Product Identifier

SAFETY-KLEEN DIMETHYLEFORMAMIDE (RECYCLED)

Product Code

1061933, 1064933

Synonyms

DMF; N, N-Dimethyl-formamide

Recommended Use

General solvent. If this product is used in combination with other products, refer to the Safety Data Sheets for those products.

Restrictions on Use

None known.

Manufacturer Information

Safety-Kleen Systems, Inc.
42 Longwater Drive
Norwell, MA 02061
www.safety-kleen.com

Phone: 1-800-669-5740

Emergency # 1-800-468-1760

Issue Date

December 26, 2018

Supersedes Issue Date

May 11, 2015

Original Issue Date

September 19, 1997

* * * Section 2 - Hazard(s) Identification * * *

Classification in Accordance with 29 CFR 1910.1200.

Flammable Liquids, Category 3
Acute Toxicity (Dermal), Category 4
Acute Toxicity (Inhalation), Category 4
Serious Eye Damage/Irritation, Category 2
Reproductive Toxicity, Category 1B

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

DANGER!

Hazard Statement(s)

Flammable liquid and vapor.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
May damage the unborn child.

Precautionary Statement(s)

Prevention

Keep away from heat/sparks/open flames/hot surfaces – No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves, eye and face protection, and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Response

In case of fire: Use carbon dioxide, alcohol-resistant foam, dry chemical, water spray, or water fog. IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN (or hair): Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Do NOT induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration. Call a poison control center or doctor immediately for treatment advice.

Storage

Store in a well-ventilated place. Keep cool. Keep container tightly closed.

Disposal

Dispose of in accordance with all applicable federal, state and local regulations.

Hazard(s) Not Otherwise Classified

None known.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS	Component	Percent
68-12-2	Dimethylformamide	100

* * * Section 4 - First Aid Measures * * *

Description of Necessary Measures

Inhalation

IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin

IF ON SKIN (or hair): Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. Take off contaminated clothing and wash it before reuse.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

IF SWALLOWED: Do NOT induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration. Call a poison control center or doctor immediately for treatment advice.

Most Important Symptoms/Effects

Acute

Flammable liquid and vapor. Harmful in contact with skin. Harmful if inhaled. Causes serious eye damage. May damage the unborn child.

Delayed

Prolonged or repeated exposure may cause skin defatting.

Indication of Immediate Medical Attention and Special Treatment Needed, If Needed

IF exposed: Call a POISON CENTER or doctor/physician. Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

* * * Section 5 - Fire-Fighting Measures * * *

Suitable Extinguishing Media

Carbon dioxide, alcohol-resistant foam, dry chemical, water spray, or water fog.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Specific Hazards Arising from the Chemical

Flammable liquid and vapor. Avoid friction, static electricity and sparks. Product may be sensitive to static discharge, which could result in fire or explosion. Vapors may form explosive mixture with air. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back. Vapors may cause drowsiness and dizziness. Fire may produce irritating, poisonous and/or corrosive fumes. Runoff may create fire or explosion hazard. Containers may rupture or explode. Empty containers may contain product residue.

Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Burning may produce oxides of carbon, oxides of nitrogen.

Special Protective Equipment and Precautions for Firefighters

A positive pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Fire Fighting Measures

Keep storage containers cool with water spray. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Stay upwind and keep out of low areas. Dike for later disposal.

* * * Section 6 - Accidental Release Measures * * *

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Clean Up

Remove all ignition sources. All equipment used when handling the product must be grounded. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

There may be specific regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **Section 15, Regulatory Information**.

* * * Section 7 - Handling and Storage * * *

Precautions for Safe Handling

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

Conditions for Safe Storage, Including Any Incompatibilities

Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition Keep container tightly closed. Keep cool. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Empty containers may contain product residue. Store in a well-ventilated place. Store locked up. See **Section 14: Transportation Information** for Packing Group information.

Incompatibilities

Acids, combustible materials, metals, halo carbons, oxidizing materials, reduction agents.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Dimethylformamide (68-12-2)

ACGIH:	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA Final:	10 ppm TWA; 30 mg/m3 TWA prevent or reduce skin absorption
OSHA Vacated:	10 ppm TWA; 30 mg/m3 TWA Prevent or reduce skin absorption
NIOSH:	10 ppm TWA; 30 mg/m3 TWA Potential for dermal absorption

Appropriate Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

Individual Protective Measures, such as Personal Protective Equipment

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: safety glasses, gloves, lab coat or apron.

Eyes/Face Protection

Safety glasses with side shields should be worn at a minimum. Additional protection such as goggles, face shields, or respirators may be needed depending upon anticipated use and concentrations of mists or vapors. Provide an emergency eye

Skin Protection

Where skin contact is likely, wear chemical impervious protective gloves; use of natural rubber (latex) or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, coveralls, long sleeve shirts, or other protective clothing.

Respiratory Protection

Use NIOSH-certified, air-purifying respirators with N-, P-, or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air-purifying respirators is limited. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance/Odor :	Clear, colorless to yellow liquid, fishy odor	**pH:**	Not applicable.
Boiling Point:	307°F (153°C)	**Odor Threshold:**	Not available.
Solubility (H2O):	Complete	**Melting Point:**	-78°F (-61°C)
Density:	7.9 LB/US gal (950 g/l)	**Specific Gravity:**	0.95 (water = 1)
Evaporation Rate:	Less than 1 (butyl acetate = 1)	**Octanol/H2O Coeff.:**	Log Pow = -1.01
LFL:	2.2 VOL % at 212°F (100°C)	**Auto Ignition Temperature:**	833°F (445°C)
UFL:	15.2 VOL % at 212°F (100°C)	**Flash Point:**	136°F (58°C) Closed Cup
Vapor Pressure:	3.7 mm Hg at 70°F (25°C)		153°F (67°C) Open Cup

Other Property Information

No information is available.

* * * Section 10 - Stability & Reactivity * * *

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions To Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials

Avoid acids, combustible materials, metals, halo carbons, halogens, oxidizing materials and reducing agents.

Hazardous Decomposition Products

Burning may produce oxides of carbon, oxides of nitrogen.

* * * Section 11 - Toxicological Information * * *

Toxicity Data and Information

Component Analysis - LD50/LC50

Dimethylformamide (68-12-2)

Oral LD50 Rat 2000 mg/kg; Dermal LD50 Rat >3.2 g/kg

Information on Likely Routes of Exposure

Inhalation

Harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs), may cause facial flush, high blood pressure, abdominal pain and spasms, constipation, diarrhea, appetite loss, and other signs of injury.

Ingestion

May be harmful if swallowed. May cause headache, dizziness, nausea, vomiting, diarrhea, abdominal pains and spasms. Aspiration hazard: breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

Skin Contact

Harmful in contact with skin. May cause allergic skin reactions. May be absorbed through the skin and cause harm as noted under Inhalation.

Eye Contact

Causes serious eye irritation with redness, tearing, pain, and/or blurred vision.

Immediate Effects

Flammable liquid and vapor. Harmful in contact with skin. Harmful if inhaled. Causes serious eye damage. May damage the unborn child.

Delayed Effects

Repeated or prolonged exposure may cause fatigue, weakness, nervousness, sleep disorders, vertigo, facial congestion, disgestive disturbances, epigastric pain, cardiovascular abnormalities, numbness of the extremities, functional nervous system disorders, and increased levels of serum amylase suggestion pancreatitis. Prolonged or repeated exposure may cause dermatitis as a result of defatting action. Prolonged or repeated contact with vapors or liquid may cause conjunctivitis.

Irritation/Corrosivity

No information available for the product.

Respiratory Sensitization

No information available for the product.

Skin Sensitization

May cause an allergic skin reaction.

Carcinogenicity

Not classifiable as a human carcinogen.

Component Carcinogenicity

Dimethylformamide (68-12-2)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Germ Cell Mutagenicity

No information available for the product.

Teratogenicity

No information available for the product.

Reproductive Effects

Dimethylformamide has demonstrated human effects of reproductive toxicity.

Specific Target Organ Effects - Single Exposure

Skin, respiratory systems, eyes.

Specific Target Organ Effects - Repeated Exposure

No information available for the product.

Aspiration Hazard

May be fatal if swallowed and enters airways.

Medical Conditions Aggravated by Exposure

Individuals with pre-existing kidneys, liver, and/or skin disorders and/or allergies may have increased susceptibility to the effects of exposure.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

Highly toxic to aquatic life.

Component Analysis - Ecotoxicity - Aquatic Toxicity

Dimethylformamide (68-12-2)

Duration/Test/Species	Concentration/Conditions/Notes
96 Hr LC50 Lepomis macrochirus	6300 mg/L
96 Hr LC50 Oncorhynchus mykiss	9800 mg/L [flow-through]
96 Hr LC50 Pimephales promelas	10410 mg/L [flow-through]
96 Hr EC50 Desmodesmus subspicatus	>500 mg/L

Persistence and Degradability

No information available for the product.

Bioaccumulation Potential

No information available for the product.

Mobility in Soil

No information available for the product.

Other Adverse Effects

No additional information is available.

* * * Section 13 - Disposal Considerations * * *

Disposal Instructions

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

US EPA Waste Number & Descriptions

D001

Based on available data, this information applies to the product as supplied to the user. Processing, use, or contamination by the user may change the waste code applicable to the disposal of this product.

* * * Section 14 - Transport Information * * *

Emergency Response Guide Number

129 Reference .*North American Emergency Response Guidebook*

DOT **Shipping Name:** N,N-Dimethylformamide
UN/NA #: UN2265 **Hazard Class:** 3 **Packing Group:** III
Required Label(s): FLAMMABLE LIQUID

TDG **Shipping Name:** N,N-Dimethylformamide
UN/NA #: UN2265 **Hazard Class:** 3 **Packing Group:** III

* * * Section 15 - Regulatory Information * * *

Volatile Organic Compounds (As Regulated)

100 WT%; 7.9 LB/US gal; 950 g/l
As per 40 CFR Part 51.100(s)

Federal Regulations

SARA 302/304

Component Analysis

Based on the ingredient(s) listed in SECTION 3, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA 311/312 Hazardous Categories

Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactive:** No

SARA Section 313

Component Analysis

This product contains a "toxic" chemical subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

Name/CAS No.		Percent by Weight
Dimethylformamide (68-12-2)	1.0 % de minimis concentration	100

CERCLA

Component Analysis

Based on the ingredient(s) listed in SECTION 3, this product contains the following "hazardous substance" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4 with the following reportable quantities (RQ):

Dimethylformamide (68-12-2) 100 lb final RQ; 45.4 kg final RQ

TSCA Inventory

All the components of this product are listed on, or are automatically included as "naturally occurring chemical substances" on, or are exempted from the requirement to be listed on, the TSCA Inventory.

Component Analysis

Component	CAS #	TSCA
Dimethylformamide	68-12-2	Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	MA	MN	NJ	PA	CA
Dimethylformamide	68-12-2	Yes	Yes	Yes	Yes	Yes

Not listed under California Proposition 65.

Canadian Regulations

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR.

Component Analysis

Component	CAS #	CAN
Dimethylformamide	68-12-2	DSL

Canadian WHMIS Information

B3, D2A, D2B

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Dimethylformamide (68-12-2) 1 %

* * * Section 16 - Other Information * * *

NFPA Ratings: Health: 2 **Fire:** 2 **Reactivity:** 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Revision Information

2022-1: Update to Section 1, Addition to Section 15.

Key/Legend

ACGIH - American Conference of Governmental Industrial Hygienists; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Disclaimer

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information. refers. The data contained on this sheet apply to the product as supplier to the user.

End of Sheet 82722