Product Stewardship Summary

Dimethylformamide

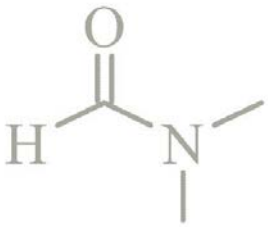
General Statement

Dimethylformamide is a colorless organic solvent that is used in the synthesis of organic compounds and acts as a catalyst in carboxylation reactions. Dimethylformamide is a low to moderate hazard material and the risk of adverse health effects associated with both occupational and consumer use of this chemical is anticipated to be low to moderate.

Dimethylformamide is used in industrial settings only and will not be present within consumer products. When handled responsibly within industrial settings, the potential for exposure and subsequent risk can be minimized, allowing dimethylformamide to be used safely.

Chemical Identity

Name: Dimethylformamide
Brand Names: Not applicable
Chemical name (IUPAC): N,N Dimethylmethanamide
CAS number(s): 68-12-2
EC number: 200-679-5
Molecular formula: C_3H_7NO
Structure:



Uses and Applications

Dimethylformamide is used as an industrial solvent and in the production of fibers, films, and surface coatings. It is also used as a solvent in the production of polyethane-coated textiles and synthetic fibers.

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Physical/Chemical Properties

Phys/Chem Safety Assessment

Property	Value
Form	Colorless liquid
Physical state	Liquid
Color	Clear / colorless
Odor	Amine-like
Density	0.951 g/cm^3 @ 20°C
Melting / boiling point	-61 / 153 °C @ 101.325 kPa
Flammability	No data available
Explosive properties	No data available
Self-ignition temperature	445°C
Vapor pressure	3.77 hPa @ 20°C
Mol weight	73.09 g/mol
Water solubility	Completely miscible
Flash point	58°C
Octanol-water partition coefficient (Logk_{ow})	-1.01

Exposure, Hazard and Safety Assessment

The following section describes possible exposure scenarios and hazards associated with dimethylformamide. The exposure assessment describes both the amount of and the frequency with which a chemical substance reaches a person, a population of people, or the environment. Hazard refers to the inherent properties of a substance that make it capable of causing harm to human health or the environment. The safety assessment reports the possibility of a harmful event arising from exposure to a chemical or physical agent under specific conditions. Just because a substance may possess potentially harmful properties does not mean that it automatically poses a risk. It is not possible to make that determination without understanding the exposure.

Human Health Effects

Human Exposure Assessment

Consumer: Dimethylformamide is used in industrial settings only. Therefore, consumer exposure is unlikely.

Worker: In industrial settings, dimethylformamide is manufactured and handled in closed processes as much as possible, which ensures that worker exposure is minimized. When there is potential for exposure, such as during loading, unloading, sampling or maintenance operations, exposure to dimethylformamide can be further minimized by the proper use of personal protective equipment.

Human Hazard Assessment:

Dimethylformamide has moderate acute toxicity if inhaled, low acute toxicity if ingested and no acute toxicity if applied on skin. It is not a skin irritant or skin sensitizer, but can cause serious eye irritation. It is not classified as a carcinogen and is not associated with mutagenicity or genotoxicity. Prolonged or repeated exposure is not expected to damage internal systems or organs. Dimethylformamide is not considered to be toxic to fertility, however, it may damage unborn children.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Low acute toxicity if ingested. Moderate acute toxicity if inhaled. No acute toxicity if applied on skin. Acute exposure may damage liver.
Irritation / corrosion Skin / eye / respiratory test	Not irritating to skin. Causes serious eye irritation. Does not cause respiratory irritation.
Sensitization	Does not cause allergic reactions up on contact with skin
Toxicity after repeated exposure Oral / inhalation / dermal	Prolonged or repeated exposure is not anticipated to damage internal systems or organs
Genotoxicity / Mutagenicity	Does not affect genetic system
Carcinogenicity	Not considered as carcinogen
Toxicity for reproduction	Not toxic to fertility. However, may damage the unborn child.

Human Health Safety Assessment

Consumer: Dimethylformamide is used in industrial settings only and will not be present at appreciable concentrations within consumer products. Therefore, consumer exposure and subsequent risk is unlikely.

Worker: In industrial settings, dimethylformamide is manufactured and handled primarily in closed processes which limit exposure. Based on the implementation of good manufacturing processes and industrial hygiene practices, the occupational health risk associated with dimethylformamide is anticipated to be low.

Environmental Effects

Environmental Exposures

Dimethylformamide can be released to the environment during manufacturing of the substance, when it is used for formulating into mixtures or when used as an intermediate in industrial settings. The most likely pathway for dimethylformamide to be released to the environment would occur during its use as a non-reactive processing aid at industrial sites.

Environmental Hazard Assessment

Dimethylformamide is readily biodegradable and has low potential for bioaccumulation. Based on its physical and chemical properties, dimethylformamide is expected to have very high mobility in soil and will not adsorb to suspended solids and sediment in the aquatic environment. Volatilization from water surfaces is not expected. Dimethylformamide has a potential for volatilization from dry surfaces.

Effect Assessment	Result
Aquatic Toxicity	Not toxic to aquatic life

Fate and behavior	Result
Biodegradation	Readily biodegradable
Bioaccumulation potential	Not potentially bioaccumulative (log Kow = -1.01)
PBT / vPvB conclusion	This substance is not considered to be persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB)

Environmental Safety Assessment

Dimethylformamide is not toxic to aquatic life, is readily biodegradable and has a low potential for bioaccumulation. Based on the available data, dimethylformamide is associated with a low risk for adverse effects in the aquatic environment.

Risk Management Recommendations

Exposure to dimethylformamide in the workplace can be controlled by sufficient ventilation, proper handling and storage techniques, and the use of appropriate personal protective equipment as recommended in the SDS for this substance.

A selection of occupational exposure limits are below.

- OSHA: 8-hr TWA 10 ppm – skin designation
- NIOSH: 10-hr TWA 10 ppm – skin designation
- ACGIH: 8-hr TWA 10ppm – skin designation

Regulatory Agency Review

Dimethylformamide is on the following lists:

ACGIH - Threshold Limit Values (TLVs)
AIHA - Emergency Response Planning Guidelines (ERPGs)
Alberta - Occupational Exposure Limits (OELs)
Argentina - Occupational Exposure Limits (OELs)
Arizona DOSH - Exposure Limits for Air Contaminants - Table Z-1
ATSDR - 2015 Priority List of Hazardous Substances - Exposure Points
ATSDR - 2015 Priority List of Hazardous Substances - Frequency Points
ATSDR - 2015 Priority List of Hazardous Substances - Rank and Summary
ATSDR - 2015 Priority List of Hazardous Substances - Source Contribution Points
ATSDR - 2015 Priority List of Hazardous Substances - Toxicity Points
ATSDR - CERCLA Priority List of Hazardous Substances (1997)
ATSDR - CERCLA Priority List of Hazardous Substances (1999)
ATSDR - CERCLA Priority List of Hazardous Substances (2001)
ATSDR - CERCLA Priority List of Hazardous Substances (2003)
ATSDR - CERCLA Priority List of Hazardous Substances (2005)
ATSDR - CERCLA Priority List of Hazardous Substances (2007)
ATSDR - CERCLA Priority List of Hazardous Substances (2011)
ATSDR - CERCLA Priority List of Hazardous Substances (2013)
ATSDR - CERCLA Priority List of Hazardous Substances (2015)
Australia - Workplace Exposure Standards
Australian Inventory of Chemical Substances (AICS)
Austria - Occupational Exposure Limits (OELs)
Belgium - Occupational Exposure Limits (OELs)
British Columbia - Occupational Exposure Limits (OELs)

Bulgaria - Occupational Exposure Limits (OELs)
Cal/EPA - OEHHA Chronic Reference Exposure Levels (chRELs)
Cal/EPA - Safer Consumer Products Regulation - Candidate Chemicals and Chemical Groups
Cal/EPA - Safer Consumer Products Regulation - Initial Candidate Chemicals List
Cal/OSHA - Permissible Exposure Limits for Chemical Contaminants
Cal/OSHA - The Hazardous Substances List
California Environmental Contaminant Biomonitoring Program - Designated Chemicals
Carcinogenic Potency Database (CPDB) - Summary of Carcinogenicity Results - Rats and Mice
China - Chemical Inventory of Existing Chemical Substances (IECSC) - CAS Numbers
Colombia - Occupational Exposure Limits (OELs)
Connecticut OSHA - Exposure Limits for Air Contaminants - Table Z-1
Danish EPA - Undesirable Substances
Denmark - Occupational Exposure Limits (OELs)
DOE Protective Action Criteria (PAC)
ECHA - Candidate List of Substances of Very High Concern
ECHA - List of Pre-registered Substances
Environment Canada - CEPA - Second Priority Substances List (PSL2)
Environment Canada - Domestic Substances List (DSL)
Environment Canada - Domestic Substances List (DSL) - Persistent Categorization
Environment Canada - Domestic Substances List (DSL) Categorization of Existing Substances
Environment Canada - Hazardous Products Act (HPA) - Ingredient Disclosure List (IDL)
Environment Canada - National Pollutant Release Inventory (NPRI) - 2001
Environment Canada - National Pollutant Release Inventory (NPRI) - 2002
Environment Canada - National Pollutant Release Inventory (NPRI) - 2003
Environment Canada - National Pollutant Release Inventory (NPRI) - 2004
Environment Canada - National Pollutant Release Inventory (NPRI) - 2005
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Environment Canada - National Pollutant Release Inventory (NPRI) - 2008
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Environment Canada - National Pollutant Release Inventory (NPRI) - 2010
Environment Canada - National Pollutant Release Inventory (NPRI) - 2011
Environment Canada - National Pollutant Release Inventory (NPRI) - 2012/2013
Environment Canada - National Pollutant Release Inventory (NPRI) – 2014-2015
Environment Canada - National Pollutant Release Inventory (NPRI) – 2016-2017
EPA - 40CFR - Table 1 to Subpart F of Part 63—Synthetic Organic Chemical Manufacturing Industry Chemicals
EPA - 40CFR - Table 2 to Subpart F of Part 63 — Organic Hazardous Air Pollutants
EPA - Acute Exposure Guideline Leves (AEGLs) - Final
EPA - Acute Exposure Guideline Leves (AEGLs) - Priority List 1
EPA - CERCLA - Hazardous Substances and their Reportable Quantities (RQs)
EPA - Chemical Update System (CUS) - 2002
EPA - Clean Air Act - Section 111 - Standards of Performance for New Stationary Sources of Air Pollutants
EPA - Clean Air Act - Section 112B - Hazardous Air Pollutants
EPA - EPCRA - Section 313 - Toxic Chemicals
EPA - High Production Volume (HPV) - Chemical Hazard Data Availability
EPA - IRIS - Inhalation Reference Concentrations (RfCs)
EPA - IRIS - Inhalation Unit Risks
EPA - IRIS - Oral Reference Doses (RfDs)
EPA - IRIS - Oral Slope Factors
EPA - IRIS - Substance List
EPA - IRIS - Weight of Evidence (WOE) Characterizations
EPA - Master Testing List
EPA - Master Testing List (1996)
EPA - Office of Pollution Prevention and Toxics (OPPT) High Production Volume (HPV) Program - 1990
EPA - Pretreatment Pollutants Consent Decree Paragraph 4(c)
EPA - Regional Removal Management Levels (RML) - Chemical-specific Parameters Supporting - Density
EPA - Regional Removal Management Levels (RML) - Chemical-specific Parameters Supporting – Diffusivity
EPA - Regional Removal Management Levels (RML) - Chemical-specific Parameters Supporting - Henry's Law

Constants
EPA - Regional Removal Management Levels (RML) - Chemical-specific Parameters Supporting - Molecular Weight
EPA - Regional Removal Management Levels (RML) - Chemical-specific Parameters Supporting - Organic Carbon Partition Coefficient
EPA - Regional Removal Management Levels (RML) - Chemical-specific Parameters Supporting - Permeability Coefficient
EPA - Regional Removal Management Levels (RML) - Chemical-specific Parameters Supporting - Water Solubility
EPA - Regional Removal Management Levels (RML) - Industrial Soil Supporting (TR=1E-4, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Removal Management Levels (RML) - Industrial Soil Supporting (TR=1E-4, HQ=3) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Removal Management Levels (RML) - Residential Soil Supporting - Toxicity and Chemical-specific Information
EPA - Regional Removal Management Levels (RML) - Residential Soil Supporting (TR=1E-4, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Removal Management Levels (RML) - Residential Soil Supporting (TR=1E-4, HQ=3) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Removal Management Levels (RML) - Residential Tapwater Supporting - Toxicity and Chemical-specific Information
EPA - Regional Removal Management Levels (RML) - Residential Tapwater Supporting (TR=1E-4, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Removal Management Levels (RML) - Residential Tapwater Supporting (TR=1E-4, HQ=3) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Removal Management Levels (RML) - Summary Table - Toxicity and Chemical-specific Information
EPA - Regional Removal Management Levels (RML) - Summary Table (TR=1E-4, HQ=1) - Screening Levels
EPA - Regional Removal Management Levels (RML) - Summary Table (TR=1E-4, HQ=3) - Screening Levels
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Density
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Diffusivity in Air and Water
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Melting Point
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Molecular Weight
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Partition Coefficients
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Tapwater Dermal Parameters
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Volatility Parameters
EPA - Regional Screening Levels (RSL) - Chemical-specific Parameters Supporting - Water Solubility
EPA - Regional Screening Levels (RSL) - Composite Worker Ambient Air - Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Composite Worker Ambient Air (TR=1E-06, HQ=0.1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Composite Worker Ambient Air (TR=1E-06, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Composite Worker Soil - Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Composite Worker Soil (TR=1E-06, HQ=0.1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Composite Worker Soil (TR=1E-06, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Resident Ambient Air - Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Resident Ambient Air (TR=1E-06, HQ=0.1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Resident Ambient Air (TR=1E-06, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Resident Fish Table (TR=1E-6, HQ=0.1) - Carcinogenic and Noncarcingenic SLs
EPA - Regional Screening Levels (RSL) - Resident Fish Table (TR=1E-6, HQ=1) - Carcinogenic and Noncarcingenic SLs
EPA - Regional Screening Levels (RSL) - Resident Fish Table -Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Resident Soil - Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Resident Soil (TR=1E-06, HQ=0.1) - Carcinogenic and Noncarcinogenic SLs

EPA - Regional Screening Levels (RSL) - Resident Soil (TR=1E-06, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Resident Soil to Groundwater - Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Resident Soil to Groundwater (TR=1E-06, HQ=0.1) - Protection of Groundwater SSLs
EPA - Regional Screening Levels (RSL) - Resident Soil to Groundwater (TR=1E-06, HQ=1) - Protection of Groundwater SSLs
EPA - Regional Screening Levels (RSL) - Resident Tapwater - Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Resident Tapwater (TR=1E-06, HQ=0.1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Resident Tapwater (TR=1E-06, HQ=1) - Carcinogenic and Noncarcinogenic SLs
EPA - Regional Screening Levels (RSL) - Summary Table - Toxicity and Chemical-specific Information
EPA - Regional Screening Levels (RSL) - Summary Table (TR=1E-06, HQ=0.1) - Screening Levels
EPA - Regional Screening Levels (RSL) - Summary Table (TR=1E-06, HQ=1) - Screening Levels
EPA - Regional Screening Levels (RSL) - Summary Table (TR=1E-6, HQ=0.1) - Protection of Groundwater SSLs
EPA - Regional Screening Levels (RSL) - Summary Table (TR=1E-6, HQ=1) - Protection of Groundwater SSLs
EPA - SARA - Section 110 - Priority List of Hazardous Substances
EPA - Toxics Release Inventory (TRI) Chemicals
EPA - TSCA - 8(a) - Preliminary Assessment Information Rules (PAIR)
EPA - TSCA - 8(d) - Health and Safety Data Rule (HSDR) Rule Terminations
EPA - TSCA - 8D Health and Safety Data Rule (HSDR) (a) - Specific Chemicals
EPA - TSCA - Chemical Hazard Information Profiles (CHIPS)
EPA - TSCA - Inventory
EPA - TSCA - Test Submissions - Section 4
ETUC - Priority List for REACH Authorisation
EU - Cosmetic Directive - Annex II
EU - Endocrine Disruptors - Annex 1
EU - Endocrine Disruptors - Annex 10
EU - Endocrine Disruptors - Annex 13
EU - Endocrine Disruptors - Annex 6
EU - European Inventory of Existing Commercial Substances (EINECS)
EU - Indicative Occupational Exposure Limits (Consolidated List)
EU - Regulation No 1907/2006 - Annex XVII
EU - Regulation No 1907/2006 - Appendix 6 - Toxic to Reproduction: Category 2
EU - Table 3.1 of Annex VI to the CLP Regulation
EU - Table 3.2 of Annex VI to the CLP Regulation
FDA - List of Indirect Additives
Finland - Occupational Exposure Limits (OELs)
France - Occupational Exposure Limits (OELs)
Germany - Occupational Exposure Limits (OELs)
Grandjean and Landrigan Neurotoxicants
Hawaii - Department of Labor and Industrial Relations - Air Contaminants - Permissible Exposure Limits
Hawaii - State Department of Health - Reportable Quantities
Health Canada - Cosmetic Ingredient Hotlist - Prohibited Ingredients
Hungary - Occupational Exposure Limits (OELs)
IARC- Group 2A
Iceland - Occupational Exposure Limits (OELs)
ICH Harmonised Tripartite Guideline - Q3C(R5) - Class 2 Solvents
Illinois - List of Toxic Air Contaminants
Indiana OSHA - Exposure Limits for Air Contaminants - Table Z-1
International Chemical Secretariat (ChemSec) – REACH – Substitute It Now (SIN) List
International Conference on Harmonisation (ICH) - Q3C - Tables and List
International Council of Chemical Associations (ICCA) - High Production Volume (HPV) Initiative
International Council of Chemical Associations (ICCA) - High Production Volume (HPV) Initiative Completed Summaries
Iowa OSHA - Exposure Limits for Air Contaminants - Table Z-1
Japan - Occupational Exposure Limits (OELs)
Jordan - Occupational Exposure Limits (OELs)

Korea - Occupational Exposure Limits (OELs)
Maryland OSH - Exposure Limits for Air Contaminants - Table Z-1
Massachusetts Department of Public Health - Massachusetts Substance List (MSL)
Massachusetts Toxics Use Reduction Act (TURA)
Mexico - National Inventory of Chemical Substances
Mexico - Occupational Exposure Limits (OELs)
Michigan - Exposure Limits for Air Contaminants - Table G-1-A
Mine Safety and Health Administration (MSHA) - Permissible Exposure Limits (PELs)
Minnesota - Department of Labor and Industry - Air Contaminants - Permissible Exposure Limits
Minnesota - List of Hazardous Substances
Minnesota Department of Health - Air Values Table
Minnesota Department of Health - Toxic Free Kids Act - Chemicals of High Concern
National Cancer Institute - SMILES Notations
Nevada OSHA - Exposure Limits for Air Contaminants - Table Z-1
New Jersey - Right to Know List
New Mexico OHSB - Exposure Limits for Air Contaminants - Table Z-1
New Zealand - Inventory of Chemicals (NZIoC)
New Zealand - Workplace Exposure Standards
NFPA - Hazard Ratings
NIOSH - Immediately Dangerous to Life or Health (IDLH) Concentration Values
NIOSH - Pocket Guide - Chemicals Listed
NIOSH - Recommendations for Chemical Protective Clothing
NIOSH - Recommended Exposure Limits (RELs)
OECD - High Production Volume (HPV) Chemicals - 2004
OECD - High Production Volume (HPV) Chemicals - 2007
Ontario - Current Occupational Exposure Limits (OELs)
OSHA - 29 CFR 1910.1000 - Table Z-1
OSHA - 29 CFR 1910.1000 - Table Z-1 - Annotated
OSHA - Permissible Exposure Limits (PELs) - Construction
OSHA - Permissible Exposure Limits (PELs) - Federal Contractors
OSHA - Permissible Exposure Limits (PELs) - Shipyards
Pennsylvania - Hazardous Substance List
People's Republic of China - Second Category of Chemicals Subject to the Environmental Management on the First Import of Chemicals
Peru - Occupational Exposure Limits (OELs)
Philippine Inventory of Chemicals and Chemical Substances (PICCS)
Poland - Occupational Exposure Limits (OELs)
Puerto Rico OSHA - Exposure Limits for Air Contaminants - Table Z-1
Regional Screening Level (RSL) Composite Worker Ambient Air (TR=1E-6, HQ=1) - Toxicity and Chemical-specific Information
Rhode Island - Hazardous Substance List
Russia - Occupational Exposure Limits (OELs)
Singapore - Occupational Exposure Limits (OELs)
South Carolina OSH - Exposure Limits for Air Contaminants - Table Z-1
Sweden - Occupational Exposure Limits (OELs)
Switzerland - Occupational Exposure Limits (OELs)
Taiwan - Toxic Substances Control Act
Technischen Regeln für Gefahrstoffe (TRGS) - TRGS900
TEDX List of Potential Endocrine Disruptors
Tennessee OSHA - Exposure Limits for Air Contaminants - Table Z-1
The Netherlands - Occupational Exposure Limits (OELs)
The Philippines - Occupational Exposure Limits (OELs)
Turkey - First List of Priority Substances
Turkey - Occupational Exposure Limits (OELs)
United Kingdom - Occupational Exposure Limits (OELs)
United Kingdom - Workplace Exposure Limits (WELs) - 2011
Utah OSH - Exposure Limits for Air Contaminants - Table Z-1
Vermont - Department of Labor - Air Contaminants - Permissible Exposure Limits

Vietnam - Occupational Exposure Limits (OELs)
Virgin Islands DOSH - Exposure Limits for Air Contaminants - Table Z-1
Virginia OSH - Exposure Limits for Air Contaminants - Table Z-1
Washington State - Permissible Exposure Limits (PELs) for Airborne Contaminants
Wyoming OSHA - Exposure Limits for Air Contaminants - Table Z-1

Regulatory Information / Classification and Labeling

Under the Globally Harmonized System for classification and labeling (GHS), substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the (Extended) SDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.

GHS Classification:

Flammable liquids - Category 3
Acute toxicity (Oral) - Category 5
Acute toxicity (Inhalation) - Category 3
Serious eye damage/eye irritation - Category 2A
Reproductive toxicity - Category 1B

Hazard Statements:

H226: Flammable liquid and vapour.
H303: May be harmful if swallowed.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H360D: May damage the unborn child.

Signal Word: Danger

Precautionary Statements:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground and bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting equipment.
P242: Use non-sparking tools.
P243: Take action to prevent static discharges.
P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264: Wash skin thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Hazard Pictograms:

Conclusion

Dimethylformamide is a useful industrial solvent and chemical intermediate. Dimethylformamide is used in industrial settings only and will not be present within consumer products. When handled responsibly within industrial settings, the potential for exposure and subsequent risk can be minimized, allowing dimethylformamide to be used safely.

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Additional Information

For more information on GHS, visit http://www.osha.gov/dsg/hazcom/ghsguideoct05.pdf or http://live.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html.
Ashland product stewardship summaries are located at http://www.ashland.com/sustainability/product/product-stewardship

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