



Discover the NYCAST® Advantage

Safety Data Sheet

Section 1 - Identification

Product Identifier: Nycast™ Type 6 Cast Nylon and Type 12 Cast Nylon

Chemical Family: nylon

Recommended Use: industrial

Restrictions on Use: None

Manufacturer Information: 4300 Hamann Parkway
Willoughby, Ohio 44094
Phone: +1 (440)269-2300

Section 2 - Hazard(s) Identification

Classification in accordance with 29 CFR 1910.1200.

No classification is assigned, based on classification criteria. Review the entire data sheet for any additional information which did not result in a GHS classification.

GHS LABEL ELEMENTS

Symbol(s)

None needed according to classification criteria.

Signal Word

None needed according to classification criteria.

Hazard Statement(s)

None needed according to classification criteria.

Precautionary Statement(s)

None needed according to classification criteria.

Prevention

None needed according to classification criteria.

Response

None needed according to classification criteria.

Storage

None needed according to classification criteria.

Disposal

Dispose in accordance with all applicable regulations.

Hazard(s) Not Otherwise Classified

None known.



Section 3 - Composition / Information on Ingredients

CAS	Component	Percent
68-12-2	Dimethylformamide	<5
872-50-4	1-Methyl-2-pyrrolidone	<5
Trade Secret	Caprolactam Monomer	<5
Trade Secret	Amine Filler/Pigment	<1
Trade Secret	Carbon Black	<1
Trade Secret	Acid	<0.1
Trade Secret	Ether	<0.01

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Volatile organic compounds, Volatile organic compounds

Additional Information

This SDS covers a range of products. Listed components are not present in all products. All components of this product are considered to be fully-bound within the product matrix and, therefore, not readily available under normal conditions.

Section 4 - First-Aid Measures

DESCRIPTION OF NECESSARY MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Get medical attention.

Skin Contact

Mechanical irritation may occur. Wash with plenty of soap and water.

Eye Contact

Mechanical irritation may occur. IMMEDIATELY wash eyes with running water to remove solid and semisolid material. Get medical attention.

Ingestion

None during normal use. If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

No information on significant adverse effects.

Delayed

No information available for the product.

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

Not applicable.

Section 5 - Fire-Fighting Measures

Suitable Extinguishing Media

Use carbon dioxide, regular dry chemical, regular foam or water.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Hazardous Combustion Products

Combustion: carbon compounds, nitrogen compounds, hydrogen cyanide.

Fire Fighting Measures

Avoid inhalation of material or combustion by-products. Move material from fire area if it can be done without risk. Use extinguishing agents appropriate for surrounding fire. Stay upwind. In the molten form: Cool affected area as quickly as possible by drenching or immersing in water until material solidifies.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Eliminate all ignition sources if safe to do so. Keep unnecessary people away, isolate hazard area and deny entry. Keep out of water supplies and sewers. In the molten form: Cool affected area as quickly as possible by drenching or immersing in water until material solidifies

Section 7 - Handling and Storage

Precautions for Safe Handling

Wash thoroughly after handling.

Conditions for Safe Storage, including any incompatibilities

Store in a dry place. Store and handle in accordance with all current regulations and standards. Keep away from incompatible materials. Incompatible materials include strong acids and strong oxidizing materials.

Incompatibilities

Strong acids, strong oxidizing materials.

Section 8 - Exposure Controls / Personal Protection

Component Exposure Limits

Caprolactam Monomer (Trade Secret)

ACGIH: 5 mg/m³ TWA (inhalable fraction and vapor)

NIOSH: 1 mg/m³ TWA (dust); 0.22 ppm TWA (vapor); 1 mg/m³ TWA (vapor)
3 mg/m³ STEL (dust); 0.66 ppm STEL (vapor); 3 mg/m³ STEL (vapor)

Mexico: 1 mg/m³ TWA LMPE-PPT (dust); 5 ppm TWA LMPE-PPT (vapor); 20 mg/m³ TWA LMPE-PPT (vapor)
3 mg/m³ STEL [LMPE-CT] (dust); 10 ppm STEL [LMPE-CT] (vapor); 40 mg/m³ STEL [LMPE-CT] (vapor)

Dimethylformamide (68-12-2)

ACGIH: 10 ppm TWA

Skin - potential significant contribution to overall exposure by the cutaneous route

OSHA: 10 ppm TWA; 30 mg/m³ TWA
prevent or reduce skin absorption

NIOSH: 10 ppm TWA; 30 mg/m³ TWA
Potential for dermal absorption

Mexico: 10 ppm TWA LMPE-PPT; 30 mg/m³ TWA LMPE-PPT
20 ppm STEL [LMPE-CT]; 60 mg/m³ STEL [LMPE-CT]
Skin - potential for cutaneous absorption

Carbon black (Trade Secret)

ACGIH: 3 mg/m³ TWA (inhalable fraction)

OSHA: 3.5 mg/m³ TWA

NIOSH: 3.5 mg/m³ TWA; 0.1 mg/m³ TWA (Carbon black in presence of Polycyclic aromatic hydrocarbons, as PAH)

Mexico: 3.5 mg/m³ TWA LMPE-PPT
7 mg/m³ STEL [LMPE-CT]

Amine Filler/Pigment (Trade Secret)

ACGIH: 10 mg/m³ TWA

NIOSH: 10 mg/m³ TWA

Mexico: 10 mg/m³ TWA LMPE-PPT
20 mg/m³ STEL [LMPE-CT]

Acid (Trade Secret)

ACGIH: 1 mg/m³ TWA
3 mg/m³ STEL

OSHA: 1 mg/m³ TWA

NIOSH: 1 mg/m³ TWA
3 mg/m³ STEL

Mexico: 1 mg/m³ TWA LMPE-PPT
3 mg/m³ STEL [LMPE-CT]

Ether (Trade Secret)**ACGIH:** 20 ppm TWA

Skin- potential significant contribution to overall exposure by the cutaneous route

OSHA: 100 ppm TWA; 360 mg/m³ TWA

prevent or reduce skin absorption

NIOSH: 1 ppm Ceiling (30 min); 3.6 mg/m³ Ceiling (30 min)**Mexico:** 25 ppm TWA LMPE-PPT; 90 mg/m³ TWA LMPE-PPT100 ppm STEL [LMPE-CT]; 360 mg/m³ STEL [LMPE-CT]

Skin - potential for cutaneous absorption

Appropriate Engineering Controls

If operations involve crushing or other processes that generate dust, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Individual Protection Measures, such as Personal Protective Equipment**Eyes/Face Protection**

Wear safety goggles if eye contact is possible.

Skin Protection

No special clothing required

Glove Recommendations

Wear suitable gloves

Respiratory Protection

Grinding or machining may create dust, see applicable exposure limits.

If respirable dusts are generated, respiratory protection may be needed.

Section 9 - Physical and Chemical Properties

Physical State:	Solid	Appearance:	article
Color:	various colors	Physical Form:	Solid
Odor:	None	Odor Threshold:	Not available
Melting Point:	210-238°C	Boiling Point:	Not available
Evaporation Rate:	negligible	Vapor Pressure:	negligible
Vapor Density (air = 1):	Not applicable	Density:	0.0415 lb/in ³
Specific Gravity (water = 1):	1.15 (water=1)	Water Solubility:	negligible
Coef. Water/Oil Dist:	Not available	Auto Ignition:	398°C

Other Property Information

No additional information is available.

Section 10 - Stability and Reactivity

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable at standard temperatures and pressure.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Avoid contact with temperatures above 210°C.

Incompatible Materials

Strong acids, strong oxidizing materials.

Hazardous Decomposition

Combustion: carbon compounds, nitrogen compounds, hydrogen cyanide.

Section 11 - Toxicological Information

Acute Toxicity

No information available for the product.

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Caprolactam Monomer (Trade Secret)

Inhalation LC50 Rat 8.16 mg/L 4 h; Oral LD50 Rat 1155 mg/kg; Dermal LD50 Rabbit 1410 µL/kg

1-Methyl-2-pyrrolidone (872-50-4)

Inhalation LC50 Rat 3.1 mg/L 4 h; Oral LD50 Rat 3598 mg/kg; Dermal LD50 Rabbit 8 g/kg

Amine Filler/Pigment (Trade Secret)

Oral LD50 Rat 1165 mg/kg; Dermal LD50 Rabbit > 2000 mg/kg

Acid (Trade Secret)

Oral LD50 Rat 1530 mg/kg; Dermal LD50 Rabbit 2730mg/kg; Inhalation LC50 Rat >850 mg/m³ 1 h

Ether (Trade Secret)

Dermal LD50 Rabbit 7600 µL/kg; Inhalation LC50 Rat 46 g/m³ 2 h

Phenol Filler/Pigment (118-82-1)

Oral LD50 Rat >5000 mg/kg

Information on Likely Routes of Exposure

Inhalation

This product cannot be inhaled unless it is subjected to an activity such as sawing, drilling, grinding, welding, buffing, etc. that generates dust or fumes.

Ingestion

Ingestion is not a likely route of exposure

Skin Contact

Exposure to dust generated during grinding or machining may cause respiratory tract infection, skin irritation, and eye irritation.

Eye Contact

Grinding or machining may create dust, see applicable exposure limits.

Immediate Effects

Delayed Effects

No information on significant adverse effects.

Medical Conditions Aggravated by Exposure

No data available.

Irritation/Corrosivity Data

No information available for the product.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Germ Cell Mutagenicity

No information available for the product.

Carcinogenicity

Component Carcinogenicity

Caprolactam Monomer (Trade Secret)

ACGIH: A5 - Not Suspected as a Human Carcinogen

IARC: Monograph 71 [1999]; Supplement 7 [1987]; Monograph 39 [1986]; Monograph 19 [1979]
(Group 4 (probably not carcinogenic))

Dimethylformamide (68-12-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

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

Carbon black (Trade Secret)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 93 [2010]; Monograph 65 [1996] (Group 2B (possibly carcinogenic to humans))

DFG: Category 3B (could be carcinogenic for man, inhalable fraction)

OSHA: Present

Amine Filler/Pigment (Trade Secret)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

DFG: Category 3B (could be carcinogenic for man)

Ether (Trade Secret)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Supplement 7 [1987]; Monograph 11 [1976];
(Group 2B (possibly carcinogenic to humans))

NTP: Reasonably Anticipated To Be A Human Carcinogen

DFG: Category 4 (no significant contribution to a human cancer)

OSHA: Present

Reproductive Toxicity

N-methyl-2-pyrrolidinone has demonstrated animal effects of reproductive toxicity. All components of this product are considered to be fully-bound within the product matrix and, therefore, not readily available under normal conditions.

Specific Target Organ Toxicity - Single Exposure

No information available for the product.

Specific Target Organ Toxicity - Repeated Exposure

No information available for the product.

Aspiration Hazard

No information available for the product.

Section 12 - Ecological Information

Ecotoxicity

No information available for the product.

Component Analysis - Aquatic Toxicity**Caprolactam Monomer (Trade Secret)**

Fish: 96 Hr LC50 *Lepomis macrochirus*: 930 mg/L [static]; 96 Hr LC50 *Pimephales promelas*: 1400 mg/L [static]

Algae: 72Hr EC50 *Desmodesmus subspicatus*: 130 mg/L; 96 Hr EC50 *Desmodesmus subspicatus*: 160mg/L;
72 Hr EC50 *Pseudokirchneriella subcapitata*: 4320 - 4800 mg/L

Invertebrate: 48 Hr EC50 *Daphnia magna* Straus: >500 mg/L; 48 Hr EC50 *Daphnia magna*: 828 - 2920 mg/L

Dimethylformamide (68-12-2)

Fish: 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]

Algae: 96 Hr EC50 *Desmodesmus subspicatus*: 500 mg/L

Invertebrate: 48 Hr EC50 *Daphnia magna*: 7500 mg/L; 48 Hr EC50 *Daphnia magna*: 8485 mg/L [semi-static];
48 Hr EC50 *Daphnia magna*: 6800 -13900 mg/L [Static]

1-Methyl-2-pyrrolidone (872-50-4)

Fish: 96 Hr LC50 *Lepomis macrochirus*: 832 mg/L [static]; 96 Hr LC50 *Leuciscus idus*: 4000 mg/L [static];
96 Hr LC50 *Pimephales promelas*: 1072 mg/L [static]; 96 Hr LC50 *Poecilia reticulata*: 1400 mg/L [static]

Algae: 72Hr EC50 *Desmodesmus subspicatus*: >500 mg/L

Invertebrate: 48 Hr EC50 *Daphnia magna*: 4897 mg/L

Carbon black (Trade Secret)

Invertebrate: 24 Hr EC50 *Daphnia magna*:>5600 mg/L

Amine Filler/Pigment (Trade Secret)

Fish: 96 Hr LC50 *Pimephales promelas*: 3.47 - 4.14 mg/L [flow-through]

Algae: 72Hr EC50 *Scenedesmus subspicatus*: 1.5 mg/L

Invertebrate: 48 Hr EC50 *Daphnia magna*: 1.69 - 2.46 mg/L

Acid (Trade Secret)

Fish: 96 Hr LC50 *Gambusia affinis*: 3 - 3.5 mg/L

Invertebrate: 12 Hr EC50 *Daphnia magna*: 4.6 mg/L

Ether (Trade Secret)

Fish: 96 Hr LC50 *Lepomis macrochirus*: >10000 mg/L [static]; 96 Hr LC50 *Lepomis macrochirus*: >10000 mg/L [semi-static]; 96 Hr LC50 *Pimephales promelas*: 9850 mg/L [flow-through]; 96 Hr LC50 *Pimephales*: 10306 - 14742 mg/L [static]; 96 Hr LC50 *Pimephales promelas*: 9850 mg/L

Invertebrate: 48 Hr EC50 water flea: 163 mg/L [static]

Phenol Filler/Pigment (118-82-1)

Invertebrate: 96 Hr EC50 *Mysidopsis bahia*: >1000 mg/L

Persistence and Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No additional information is available.

Section 13 - Disposal Considerations

Disposal Methods

Dispose in accordance with all applicable regulations.

Disposal of Contaminated Packaging

Not applicable

Section 14 - Transport Information

US DOT Information

Not regulated.

TDG Information

Not regulated

Section 15 - Regulatory Information

U.S. Federal Regulations**U.S. Federal Regulations**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Dimethylformamide (68-12-2)

SARA 313: 1.0% de minimis concentration

CERCLA: 100 lb. final RQ; 45.4 kg final RQ

1-Methyl-2-pyrrolidone (872-50-4)

SARA 313: 1.0% de minimis concentration

Amine Filler/Pigment (Trade Secret)

SARA 313: 1.0% de minimis concentration

TSCA 12b: Section 4, 1% de minimis concentration

Acid (Trade Secret)**CERCLA:** 5000 lb. final RQ; 2270 kg final RQ**Ether (Trade Secret)****SARA 313:** 1.0% de minimis concentration**CERCLA:** 100 lb. final RQ; 45.4 kg final RQ**Phenol Filler/Pigment (118-82-1)****TSCA 12b:** Section 4, 1% de minimis concentration**U.S. State Regulations****U.S. State Regulations**

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

Component	CAS	CA	MA	MN	NJ	PA
Caprolactam Monomer	Trade Secret	Yes	Yes	Yes	Yes	Yes
Dimethylformamide	68-12-2	Yes	Yes	Yes	Yes	Yes
1-Methyl-2-pyrrolidone	872-50-4	No	Yes	No	Yes	Yes
Carbon Black	Trade Secret	Yes	Yes	Yes	Yes	Yes
Amine Filler/Pigment	Trade Secret	Yes	Yes	Yes	Yes	Yes
Acid	Trade Secret	Yes	Yes	Yes	Yes	Yes
Ether	Trade Secret	Yes	Yes	Yes	Yes	Yes
Phenol Filler/Pigment (¹ related to: Phenols)	118-82-1	Yes¹	No	No	No	No

The following statement(s) are provided under California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Component Analysis- Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
Caprolactam Monomer	Trade Secret	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Dimethylformamide	68-12-2	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
1-Methyl-2-pyrrolidone	872-50-4	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Carbon Black	Trade Secret	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Amine Filler/Pigment	Trade Secret	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Acid	Trade Secret	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Ether	Trade Secret	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Phenol Filler/Pigment	118-82-1	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - Other Information

Summary of Changes

New SDS: 10000

Revision: 1.0001

Issue Date 07/01/2015

NFPA Ratings: Health: 0 Fire: 0 Reactivity: 0

Hazard Scale: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7, H = 8, I = 9, J = 10, K = 11, L = 12, M = 13, N = 14, O = 15, P = 16, Q = 17, R = 18, S = 19, T = 20, U = 21, V = 22, W = 23, X = 24, Y = 25, Z = 26, AA = 27, AB = 28, AC = 29, AD = 30, AE = 31, AF = 32, AG = 33, AH = 34, AI = 35, AJ = 36, AK = 37, AL = 38, AM = 39, AN = 40, AO = 41, AP = 42, AQ = 43, AR = 44, AS = 45, AT = 46, AU = 47, AV = 48, AW = 49, AX = 50, AY = 51, AZ = 52, BA = 53, BB = 54, BC = 55, BD = 56, BE = 57, BF = 58, BG = 59, BH = 60, BI = 61, BJ = 62, BK = 63, BL = 64, BM = 65, BN = 66, BO = 67, BP = 68, BQ = 69, BR = 70, BS = 71, BT = 72, BU = 73, BV = 74, BW = 75, BX = 76, BY = 77, BZ = 78, CA = 79, CB = 80, CC = 81, CD = 82, CE = 83, CF = 84, CG = 85, CH = 86, CI = 87, CJ = 88, CK = 89, CL = 90, CM = 91, CN = 92, CO = 93, CP = 94, CQ = 95, CR = 96, CS = 97, CT = 98, CU = 99, CV = 100, CW = 101, CX = 102, CY = 103, CZ = 104, DA = 105, DB = 106, DC = 107, DD = 108, DE = 109, DF = 110, DG = 111, DH = 112, DI = 113, DJ = 114, DK = 115, DL = 116, DM = 117, DN = 118, DO = 119, DP = 120, DQ = 121, DR = 122, DS = 123, DT = 124, DU = 125, DV = 126, DW = 127, DX = 128, DY = 129, DZ = 130, EA = 131, EB = 132, EC = 133, ED = 134, EE = 135, EF = 136, EG = 137, EH = 138, EI = 139, EJ = 140, EK = 141, EL = 142, EM = 143, EN = 144, EO = 145, EP = 146, EQ = 147, ER = 148, ES = 149, ET = 150, EU = 151, EV = 152, EW = 153, EX = 154, EY = 155, EZ = 156, FA = 157, FB = 158, FC = 159, FD = 160, FE = 161, FF = 162, FG = 163, FH = 164, FI = 165, FJ = 166, FK = 167, FL = 168, FM = 169, FN = 170, FO = 171, FP = 172, FQ = 173, FR = 174, FS = 175, FT = 176, FU = 177, FV = 178, FW = 179, FX = 180, FY = 181, FZ = 182, GA = 183, GB = 184, GC = 185, GD = 186, GE = 187, GF = 188, GG = 189, GH = 190, GI = 191, GJ = 192, GK = 193, GL = 194, GM = 195, GN = 196, GO = 197, GP = 198, GQ = 199, GR = 200, GS = 201, GT = 202, GU = 203, GV = 204, GW = 205, GX = 206, GY = 207, GZ = 208, HA = 209, HB = 210, HC = 211, HD = 212, HE = 213, HF = 214, HG = 215, HH = 216, HI = 217, HJ = 218, HK = 219, HL = 220, HM = 221, HN = 222, HO = 223, HP = 224, HQ = 225, HR = 226, HS = 227, HT = 228, HU = 229, HV = 230, HW = 231, HX = 232, HY = 233, HZ = 234, IA = 235, IB = 236, IC = 237, ID = 238, IE = 239, IF = 240, IG = 241, IH = 242, II = 243, IJ = 244, IK = 245, IL = 246, IM = 247, IN = 248, IO = 249, IP = 250, IQ = 251, IR = 252, IS = 253, IT = 254, IU = 255, IV = 256, IW = 257, IX = 258, IY = 259, IZ = 260, JA = 261, JB = 262, JC = 263, JD = 264, JE = 265, JF = 266, JG = 267, JH = 268, JI = 269, JJ = 270, JK = 271, JL = 272, JM = 273, JN = 274, JO = 275, JP = 276, JQ = 277, JR = 278, JS = 279, JT = 280, JU = 281, JV = 282, JW = 283, JX = 284, JY = 285, JZ = 286, KA = 287, KB = 288, KC = 289, KD = 290, KE = 291, KF = 292, KG = 293, KH = 294, KI = 295, KJ = 296, KK = 297, KL = 298, KM = 299, KN = 300, KO = 301, KP = 302, KQ = 303, KR = 304, KS = 305, KT = 306, KU = 307, KV = 308, KW = 309, KX = 310, KY = 311, KZ = 312, LA = 313, LB = 314, LC = 315, LD = 316, LE = 317, LF = 318, LG = 319, LH = 320, LI = 321, LJ = 322, LK = 323, LL = 324, LM = 325, LN = 326, LO = 327, LP = 328, LQ = 329, LR = 330, LS = 331, LT = 332, LU = 333, LV = 334, LW = 335, LX = 336, LY = 337, LZ = 338, MA = 339, MB = 340, MC = 341, MD = 342, ME = 343, MF = 344, MG = 345, MH = 346, MI = 347, MJ = 348, MK = 349, ML = 350, MM = 351, MN = 352, MO = 353, MP = 354, MQ = 355, MR = 356, MS = 357, MT = 358, MU = 359, MV = 360, MW = 361, MX = 362, MY = 363, MZ = 364, NA = 365, NB = 366, NC = 367, ND = 368, NE = 369, NF = 370, NG = 371, NH = 372, NI = 373, NJ = 374, NK = 375, NL = 376, NM = 377, NN = 378, NO = 379, NP = 380, NQ = 381, NR = 382, NS = 383, NT = 384, NU = 385, NV = 386, NW = 387, NX = 388, NY = 389, NZ = 390, OA = 391, OB = 392, OC = 393, OD = 394, OE = 395, OF = 396, OG = 397, OH = 398, OI = 399, OJ = 400, OK = 401, OL = 402, OM = 403, ON = 404, OO = 405, OP = 406, OQ = 407, OR = 408, OS = 409, OT = 410, OU = 411, OV = 412, OW = 413, OX = 414, OY = 415, OZ = 416, PA = 417, PB = 418, PC = 419, PD = 420, PE = 421, PF = 422, PG = 423, PH = 424, PI = 425, PJ = 426, PK = 427, PL = 428, PM = 429, PN = 430, PO = 431, PP = 432, PQ = 433, PR = 434, PS = 435, PT = 436, PU = 437, PV = 438, PW = 439, PX = 440, PY = 441, PZ = 442, QA = 443, QB = 444, QC = 445, QD = 446, QE = 447, QF = 448, QG = 449, QH = 450, QI = 451, QJ = 452, QK = 453, QL = 454, QM = 455, QN = 456, QO = 457, QP = 458, QQ = 459, QR = 460, QS = 461, QT = 462, QU = 463, QV = 464, QW = 465, QX = 466, QY = 467, QZ = 468, RA = 469, RB = 470, RC = 471, RD = 472, RE = 473, RF = 474, RG = 475, RH = 476, RI = 477, RJ = 478, RK = 479, RL = 480, RM = 481, RN = 482, RO = 483, RP = 484, RQ = 485, RR = 486, RS = 487, RT = 488, RU = 489, RV = 490, RW = 491, RX = 492, RY = 493, RZ = 494, SA = 495, SB = 496, SC = 497, SD = 498, SE = 499, SF = 500, SG = 501, SH = 502, SI = 503, SJ = 504, SK = 505, SL = 506, SM = 507, SN = 508, SO = 509, SP = 510, SQ = 511, SR = 512, SS = 513, ST = 514, SU = 515, SV = 516, SW = 517, SX = 518, SY = 519, SZ = 520, TA = 521, TB = 522, TC = 523, TD = 524, TE = 525, TF = 526, TG = 527, TH = 528, TI = 529, TJ = 530, TK = 531, TL = 532, TM = 533, TN = 534, TO = 535, TP = 536, TQ = 537, TR = 538, TS = 539, TT = 540, TU = 541, TV = 542, TW = 543, TX = 544, TY = 545, TZ = 546, UA = 547, UB = 548, UC = 549, UD = 550, UE = 551, UF = 552, UG = 553, UH = 554, UI = 555, UJ = 556, UK = 557, UL = 558, UM = 559, UN = 560, UO = 561, UP = 562, UQ = 563, UR = 564, US = 565, UT = 566, UY = 567, UZ = 568, VA = 569, VB = 570, VC = 571, VD = 572, VE = 573, VF = 574, VG = 575, VH = 576, VI = 577, VJ = 578, VK = 579, VL = 580, VM = 581, VN = 582, VO = 583, VP = 584, VQ = 585, VR = 586, VS = 587, VT = 588, VU = 589, VV = 590, VW = 591, VX = 592, VY = 593, VZ = 594, WA = 595, WB = 596, WC = 597, WD = 598, WE = 599, WF = 600, WG = 601, WH = 602, WI = 603, WJ = 604, WK = 605, WL = 606, WM = 607, WN = 608, WO = 609, WP = 610, WQ = 611, WR = 612, WS = 613, WT = 614, WU = 615, WV = 616, WW = 617, WX = 618, WY = 619, WZ = 620, XA = 621, XB = 622, XC = 623, XD = 624, XE = 625, XF = 626, XG = 627, XH = 628, XI = 629, XJ = 630, XK = 631, XL = 632, XM = 633, XN = 634, XO = 635, XP = 636, XQ = 637, XR = 638, XS = 639, XT = 640, XU = 641, XV = 642, XW = 643, XX = 644, XY = 645, XZ = 646, YA = 647, YB = 648, YC = 649, YD = 650, YE = 651, YF = 652, YG = 653, YH = 654, YI = 655, YJ = 656, YK = 657, YL = 658, YM = 659, YN = 660, YO = 661, YP = 662, YQ = 663, YR = 664, YS = 665, YT = 666, YU = 667, YV = 668, YW = 669, YX = 670, YZ = 671, ZA = 672, ZB = 673, ZC = 674, ZD = 675, ZE = 676, ZF = 677, ZG = 678, ZH = 679, ZI = 680, ZJ = 681, ZK = 682, ZL = 683, ZM = 684, ZN = 685, ZO = 686, ZP = 687, ZQ = 688, ZR = 689, ZS = 690, ZT = 691, ZU = 692, ZV = 693, ZW = 694, ZX = 695, ZY = 696, ZZ = 697

Key /Legend

C = Celsius; CA = California; CAN = Canada; CAS = Chemical Abstract Service; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; CFR = Code of Federal Regulations; CN = Canada; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Canadian Domestic Substance List; EPA = Environmental Protection Agency; EU = European Union; IARC = International Agency for Research on Cancer; IDL = Ingredient Disclose List; IDHL = Immediately Dangerous to Life and Health; JP = Japan; KR = Korea; LC50 = Lethal Concentration; LD50 = Lethal Dose; LEL = Lower Explosive Limit; LMPE-CT = Mexico STEL equivalent; LMPE-PPT = Mexico TWA equivalent; MSDS = Material Safety Data Sheet; NIOSH = National Institute of Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; NZ = New Zealand; OEL = Occupational Exposure Limit; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; PH = Phillipines; RQ = Reportable Quantity; SARA = Superfund Amendments Act; SDS = Safety Data Sheet; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substance Control Act; TWA = Time Weighted Average; UEL = Upper Explosive Limit; UN = United Nations; US = United States; WHMIS = Workplace Hazardous Materials Information System; Globally Harmonized System of Classification and Labeling (GHS)

Other Information

The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereon.

End of Sheet CN-04



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