

SAFETY DATA SHEET

Version: 3.0
Date of Issue: 19 March 2020
Date of First Issue: 20 March 2012


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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label	M-Bond 200 Catalyst C
Other means of identification	Not applicable
Recommended use of the chemical and restrictions on use	
Recommended use	Adhesives
Restrictions on use	Anything other than the above.
Details of the supplier of the safety data sheet	
Supplier	VISHAY MEASUREMENTS GROUP, INC.
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	+1 919-365-3800
Fax	+1 919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com
Emergency telephone number	1-800-424-9300
	CHEMTREC (24 hours)

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200	
Physical hazards	Flammable Liquid, Category 2
Health hazards	Skin sensitization, Category 1 Eye Irritation, Category 2A Specific target organ toxicity — single exposure, Category 1 (Blood) Specific target organ toxicity — single exposure, Category 3 (Narcotic Effects)
Environmental hazards	Not classified
Hazard Symbol	
Signal Word(s)	DANGER
Hazard Statement(s)	Highly flammable liquid and vapour. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. Causes damage to organs (Blood, by ingestion or inhalation)
Precautionary Statement(s) Prevention	Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Wash hands and exposed skin thoroughly after handling. Do not breathe vapour. Do not eat, drink or smoke when using this product. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use explosion proof electrical equipment.

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Response	Use non-sparking tools. Take precautionary measures against static discharges. In case of fire use water, alcohol resistant foam, carbon dioxide or dry agent. IF exposed: Call a POISON CENTER or doctor/physician. IF ON SKIN or hair: Take off immediately all contaminated clothing. Rinse skin with water or shower. If skin irritation occurs: Get medical advice/attention. 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 INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Storage	Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents in accordance with local, state or national legislation.
Other hazards	None known.
Percent of the mixture consists of ingredient(s) of unknown acute toxicity:	Not applicable – mixture not classified as Acutely Toxic

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures Substances in preparations / mixtures

Chemical identity of the substance	%W/W	Synonym(s)	CAS No.	Hazard classification
Propan-2-ol	<100	Isopropanol; Isopropyl alcohol; 2-Propanol	67-63-0	Flammable Liquids - Category 2 Eye Irritation - Category 2A Specific Target Organ Toxicity - Single Exposure - Category 3 (Narcotic Effects)
N-Phenyldiethanolamine	<5	Ethanol, 2,2'-(phenylimino)bis-; 2,2'-Iminodi-N-phenylethanol	120-07-0	Skin Sensitization - Category 1 Eye Damage - Category 1 Specific Target Organ Toxicity - Single Exposure - Category 1 (Blood) Aquatic Toxicity, Chronic - Category 3

SECTION 4: FIRST AID MEASURES



Description of first aid measures

Self-protection of the first aider

Inhalation

Skin Contact

No action should be taken involving personal risk. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe vapour. Avoid contact with skin and eyes. Contaminated clothing should be laundered before reuse. Wash hands and exposed skin thoroughly after handling. IF exposed: Call a POISON CENTER or doctor/physician.

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

IF ON SKIN: Wash with plenty of water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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Eye Contact	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, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If symptoms develop, obtain medical attention. Call a POISON CENTER/doctor if you feel unwell.
Most important symptoms and effects, both acute and delayed	Causes serious eye irritation. Causes damage to organs - Blood. May cause drowsiness or dizziness. May cause nausea/vomiting. May cause an allergic skin reaction.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media Suitable Extinguishing Media	In case of fire use water spray or fog, alcohol resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing Media Special hazards arising from the substance or mixture	Do not use water jet. Direct water jet may spread the fire. Phenolics. Amines. Highly flammable liquid and vapour. Flash Point: 11.7 °C Decomposes in a fire giving off toxic fumes: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Phenolics. Amines. The vapour may be invisible, heavier than air and spread along ground. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere.
Special protective equipment and precautions for fire fighters	Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Avoid release to the environment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Caution - spillages may be slippery. Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Do not breathe vapour. Avoid contact with skin, eyes or clothing. Wear suitable respiratory protection. Use personal protective equipment as required. See Section: 8. Wash contaminated clothing before reuse. The vapour is heavier than air; beware of pits and confined spaces.
Environmental precautions	Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere.
Methods and material for containment and cleaning up	Ensure suitable personal protection (including respiratory protection) during removal of spillages. Use non-sparking equipment when picking up flammable spill. Bund storage facilities to prevent soil and water pollution in the event of spillage. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do not adsorb onto sawdust or other combustible materials. Transfer to a lidded container for disposal or recovery. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Ensure adequate ventilation. Do not breathe vapour. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. In case of inadequate ventilation wear respiratory protection. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Highly flammable liquid and vapour. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Conditions for safe storage, including any	Ground/bond container and receiving equipment. Keep container tightly closed.

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incompatibilities	Bund storage facilities to prevent soil and water pollution in the event of spillage. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Keep away from direct sunlight.
Storage temperature	Store at a cool/low temperature: 5 - 25°C . Flash Point: 11.7 °C
Storage life	Vapour is explosive in air at temperatures higher than the flash point.
Incompatible materials	Stable under normal conditions.
Specific end use(s)	Keep away from: Strong reducing and oxidising agents. Acids (Nitric acid and Sulphuric acid), Halogens and halogenated compounds. Adhesives.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Propan-2-ol	67-63-0	400	980	500	1225	NIOSH
		400	980	-	-	OSHA
		200	-	400	-	ACGIH

Source:

ACGIH: American Conference of Governmental Industrial Hygienists - Threshold limit values (TLV) 2017

NIOSH: National Institute for Occupational Safety and Health (NIOSH) Recommended exposure limits (RELs)

OSHA Permissible Exposure Limit (PEL): Occupational Safety and Health Standards, 1910.1000 TABLE Z-1

The other components listed in Section 3 do not have assigned occupational exposure limits.

Biological Exposure Indices

SUBSTANCE	CAS No.	Determinant	Biological Exposure Indices	Sampling Time	Note
Propan-2-ol	67-63-0	Acetone in urine	40 mg/l	End of shift at end of workweek	B, Ns

Source: ACGIH: American Conference of Governmental Industrial Hygienists - Biological Exposure Index (BEI) 2017

Note:

B: Background

Ns: The determinant is nonspecific, since it is also observed after exposure to other chemicals.

The other components listed in Section 3 do not have assigned Biological Exposure Indices.

Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Remove all ignition sources. A washing facility/water for eye and skin cleaning purposes should be present.

Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Keep good industrial hygiene. Do not breathe vapour. Avoid contact with skin and eyes. Wash hands before breaks and after work. Keep work clothes separately. Wash contaminated clothing before reuse. Do not eat, drink or smoke at the work place.

Eye/face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection. Recommended: Equivalent or similar to EN166

Skin protection

Hand protection:

Wear impervious gloves. Recommended: Equivalent or similar to EN374.

Gloves should be changed regularly to avoid permeation problems. Breakthrough

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time of the glove material: refer to the information provided by the gloves' producer.

During full contact:

Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374.

Recommended: Nitrile rubber (Minimum thickness: 0.33 mm); Butyl rubber (Minimum thickness: 0.5 mm)

During splash contact:

Recommended: At least protective index 5, corresponding > 240 minutes of permeation time according to EN 374

Recommended: Polychloroprene - CR (Minimum thickness: 0.5 mm)

Unsuitable gloves materials:

Natural rubber/natural latex, Polyvinyl chloride - PVC.

Body protection:

Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection



Use only in well-ventilated areas. In case of inadequate ventilation wear respiratory protection.

For large quantities - A suitable mask with filter type A may be appropriate. (Recommended: EN141 or EN405)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties	Physico-chemical properties of substance: Propan-2-ol.
Appearance	Blue Coloured liquid.
Odor	Alcohol-like Odour
Odor Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	-88.5°C
Initial boiling point and boiling range	82.3°C (Mixture)
Flash Point	11.7 °C
Evaporation rate (Butyl acetate = 1)	2.83 (BuAc = 1)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	6.02 kPa at 25°C
Vapour density	2.1 (Air = 1)
Relative density	0.78 (H2O = 1)
Solubility(ies)	98% (Water)
Partition coefficient: n-octanol/water	0.05 log Pow (25 °C)
Auto-ignition temperature	399 °C
Decomposition Temperature	Not available.
Viscosity	2.038 mPa s (dynamic) 25 °C

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Highly flammable liquid and vapour. The vapour may be invisible, heavier than air and spread along ground. Vapour is explosive in air at temperatures higher than the flash point.
Conditions to avoid	Store at temperatures not exceeding (°C): 25 °C . Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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Incompatible materials	Keep away from: Strong reducing and oxidising agents. Acids (Nitric acid and Sulphuric acid), Halogens and halogenated compounds.
Hazardous decomposition product(s)	Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide. Phenolics. Amines. The vapour may be invisible, heavier than air and spread along ground. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects (Substances in preparations / mixtures)

Acute toxicity - Ingestion	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
Acute toxicity - Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Skin corrosion/irritation	Mixture: Based upon the available data, the classification criteria are not met.
Serious eye damage/irritation	Mixture: Eye Irritation, Category 2A: Causes serious eye irritation. Propan-2-ol: Eye Irritation, Category 2 Irritating to eyes. (rabbit) (OECD 405) 2,2'-phenyliminodiethanol: Eye Damage, Category 1 Corrosive to eyes. (rabbit) (Unnamed publication , 1974)
Respiratory or skin sensitization	Mixture: Skin sensitization, Category 1; May cause an allergic skin reaction. N-Phenyldiethanolamine: Skin Sensitisation, Category 1 Sensitisation (mouse) - Positive (OECD 442 B)
Germ cell mutagenicity	Mixture: Based upon the available data, the classification criteria are not met.
Carcinogenicity	Mixture: Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Mixture: Based upon the available data, the classification criteria are not met.
STOT - single exposure	Mixture: Specific target organ toxicity — single exposure, Category 1; Causes damage to organs. (Blood circulatory system). Mixture: Specific target organ toxicity — single exposure, Category 3 (Narcotic Effects); May cause drowsiness or dizziness. Propan-2-ol: Specific target organ toxicity — single exposure, Category 3 (Narcotic Effects); May cause drowsiness or dizziness. Test Result: Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness. LD50 (rat) > 10000 ppm. Effects and Symptoms: Ataxia (impaired locomotor coordination), Narcosis (OECD 403) N-Phenyldiethanolamine: Specific target organ toxicity — single exposure, Category 1; Causes damage to organs (Blood). LD50 (oral, rat) mg/kg: 3400. Dyspnoea, Narcosis. Can form methaemoglobin in the blood, causing cyanosis. (Unnamed publication , 1974)
STOT - repeated exposure	Mixture: Based upon the available data, the classification criteria are not met.
Aspiration hazard	Mixture: Based upon the available data, the classification criteria are not met.
Information on likely routes of exposure	
Inhalation	Possible – accidental exposure.
Ingestion	Unlikely – accidental exposure.
Skin Contact	Possible – accidental exposure.
Eye Contact	Unlikely – accidental exposure.
Early onset symptoms related to exposure	Causes serious eye irritation. Causes damage to organs - Blood. May cause drowsiness or dizziness. May cause an allergic skin reaction.

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Delayed health effects from exposure	None known.
Other information	
NTP Report on Carcinogens	None of the components are listed.
IARC Monographs	Propan-2-ol: Group 3
OSHA Designated Carcinogen	None of the components are listed.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Mixture: Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
N-Phenyldiethanolamine:	Aquatic Toxicity, Chronic - Category 3 Acute: LC50 (fish) mg/l 735 (96 hour) (OECD 203) Chronic: EC50 Aquatic invertebrates: 87.85 mg/l (Unnamed, 1995)
Persistence and degradability	No data for the mixture as a whole.
Propan-2-ol:	Readily biodegradable. Water % Degradation: 53% (Bridié AL et al. 1979)
N-Phenyldiethanolamine:	Not readily biodegradable. Weight of evidence approach: % Degradation: 2% ((Q)SAR) (2015)
Bioaccumulative potential	No data for the mixture as a whole. The product is predicted to have low potential for bioaccumulation
Propan-2-ol:	The substance has low potential for bioaccumulation. Log Kow < 3. ECHA Registration Endpoint summary: Bioaccumulation
N-Phenyldiethanolamine:	The substance has low potential for bioaccumulation. Weight of evidence approach: Log Kow: 0.63 ((Q)SAR) (US-EPA, 2012)
Mobility in soil	No data for the mixture as a whole. The product is predicted to have high mobility in soil.
Propan-2-ol:	The substance is predicted to have high mobility in soil. Log Pow: < 3; Miscible with water.
N-Phenyldiethanolamine:	The substance is predicted to have high mobility in soil. Soluble in water.
Other adverse effects	Mixture: The product is predicted to be not classified as PBT or vPvB. None of the substances in this product fulfil the criteria for being regarded as a PBT or vPvB substance.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	This material and its container must be disposed of as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue. Dispose of wastes in an approved waste disposal facility. Dispose of contents in accordance with local, state or national legislation.
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SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA
UN number	UN 1219	UN 1219	UN 1219
UN proper shipping name	ISOPROPANOL (ISOPROPYL ALCOHOL) mixture	ISOPROPANOL (ISOPROPYL ALCOHOL) mixture	ISOPROPANOL (ISOPROPYL ALCOHOL) mixture
Transport hazard class(es)	3	3	3
Packing group	II	II	II
Environmental hazards	Not classified	Not classified as a Marine Pollutant.	Not classified
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.		
Special precautions for user	See Section: 2		
Additional Information	None.		

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SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

US Federal Regulations

TSCA (Toxic Substance Control Act)	All components are listed in the Toxic Substance Control Act Chemical Substance Inventory (TSCA).
EPCRA/SARA Section 302 Extremely Hazardous Substances	Not Listed
EPCRA Section 313 Toxics Release Inventory (TRI) Program	Propan-2-ol: De Minimis limit: 1%
NIOSH Occupational Carcinogen List	Not Listed
OSHA List of highly hazardous chemicals, toxics and reactives	Not Listed
NTP Report on Carcinogens (RoC) List	Not Listed
Poison Prevention Packaging Act	Not Listed
US State Regulations	None known.
California State, Proposition 65 List	Not Listed
California State, Safer Consumer Products Regulations	Propan-2-ol: Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	Not Listed
New Jersey State Worker and Community RTK Act	Propan-2-ol: RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	Propan-2-ol: Hazardous Substance List. Environmental Hazard List
Rhode Island State, Hazardous Substances RTK Act	Propan-2-ol: Hazardous Substance List.
Non-Regional	
IARC Monographs, List of Classifications	Propan-2-ol: Group 3

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated substance / mixture classification. New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

The following sections have updates indicated by :

Version 3.0
Revision Date 27 February 2020
Date of First Issue 20 March 2012

References:

Existing Safety Data Sheet (SDS)
Existing ECHA registration(s) for and Harmonised Classification(s) for Propan-2-ol (CAS No. 1330-20-7).
Existing ECHA registration(s) for N-Phenyldiethanolamine (CAS No.120-07-0)

GHS Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 4	Supplier Flash Point Range Data
Skin Corrosion/Irritation, Category 2	Threshold Calculation
Eye Irritation, Category 2A	Threshold Calculation
Specific target organ toxicity — single exposure, Category 1 (Blood)	Threshold Calculation
Specific target organ toxicity — single exposure, Category 3 (Narcotic Effects)	Threshold Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEI: Biological Exposure Indices (ACGIH)
CAS: Chemical Abstracts Service
ECHA: European Chemicals Agency
EPCRA: Emergency Planning and Community Right-to-Know Act

PBT: Persistent, Bioaccumulative and Toxic
PEL: Permissible exposure limit

QSAR: Quantitative structure-activity relationship
RID: International Carriage of Dangerous Goods by Rail
REL: Recommended exposure limit
RTK: Right-to-Know

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IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods
LTEL: Long Term Exposure Limit
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: The Occupational Safety & Health Administration

SARA: Superfund Amendments and Reauthorization Act
SCL: Specific Concentration Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit value
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
vPvB: very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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