

SAFETY DATA SHEET

Revision: 2.0 Date: 07.07.2015



ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

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1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1	Product identifier	
	Product Name	Denex #3
	Chemical Name	Mixture
	CAS No.	Mixture
	EINECS No.	Mixture
	REACH Registration No.	None assigned.
1.2	Relevant identified uses of the substance or mixture and uses advised against	
	Identified Use(s)	PC14 Metal surface treatment products, including galvanic and electroplating products.
	Uses Advised Against	None known.
1.3	Details of the supplier of the safety data sheet	
	Company Identification	VISHAY MEASUREMENTS GROUP UK LTD Stroudley Road Basingstoke Hampshire RG24 8FW United Kingdom
	Telephone	+44 (0) 1256 462131
	Fax	+44 (0) 1256 471441
	E-Mail (competent person)	mm.uk@vishaypg.com
1.4	Emergency telephone number	(00-1) 703-527-3887 CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

2.1	Classification of the substance or mixture	
2.1.1	Regulation (EC) No. 1272/2008 (CLP)	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 STOT SE 3; H336 Aquatic Chronic 3; H412
2.2	Label elements	According to Regulation (EC) No. 1272/2008 (CLP)
	Product Name	Denex #3
	Hazard Pictogram(s)	 
	Signal Word(s)	Danger
	Contains:	Acetone, Polymer of Epichlorohydrin (Phenol-Formaldehyde Novolac) and Methyl ethyl ketone.
	Hazard Statement(s)	H225: Highly flammable liquid and vapour. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness. H412: Harmful to aquatic life with long lasting effects.

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Precautionary Statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing vapours.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Additional Information

None.

2.3 Other hazards

None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

EC Classification Regulation (EC) No. 1272/2008 (CLP)

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Acetone	70 - 80	67-64-1	200-662-2	None assigned	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066
Polymer of Epichlorohydrin (Phenol-Formaldehyde Novolac)	15 - 20	28064-14-4	-	None assigned	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Chronic 2; H411
4,4'Sulfonyldianiline	< 5	80-08-0	201-248-4	None assigned	Acute Tox. 4; H302 STOT SE 2; H371 STOT RE 2; H373 Aquatic Chronic 2; H411
Methyl ethyl ketone	< 5	78-93-3	201-159-0	None assigned	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066
Boron Trifluoride Complex	< 1	75-23-0	200-852-5	None assigned	Skin Corr. 1B; H314

H225: Highly flammable liquid and vapour. H302: Harmful if swallowed. H314: Causes severe skin burns and eye damage. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness. H371: May cause damage to organs. H373: May cause damage to organs through prolonged or repeated exposure. H411: Toxic to aquatic life with long lasting effects. EUH066: Repeated exposure may cause skin dryness or cracking.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply artificial respiration if patient is not breathing. If breathing is laboured, oxygen should be administered by qualified personnel. Obtain medical attention.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation occurs: Get medical advice/attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

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Ingestion	lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists. IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Drink two glasses of water. Do not give milk or alcoholic beverages. Do not give anything by mouth to an unconscious person. If aspiration is suspected obtain immediate medical attention.
4.2 Most important symptoms and effects, both acute and delayed	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. Inhalation of solvent vapours may give rise to nausea, headaches and dizziness. Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting.
4.3 Indication of any immediate medical attention and special treatment needed	Treat symptomatically. Latency of several hours is possible. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. Check the acid/alkali balance. After swallowing do not give any milk or digestible oils. Give a slurry of activated charcoal in water to drink.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media	As appropriate for surrounding fire. Extinguish preferably with dry chemical or alcohol foam. Carbon dioxide
Suitable Extinguishing media	
Unsuitable extinguishing media	Water is not generally recommended since it can be ineffective; however, it can be used successfully to cool containers exposed to the fire and to disperse fumes. Do not use water jet. Direct water jet may spread the fire.
5.2 Special hazards arising from the substance or mixture	Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes. May decompose in a fire giving off toxic fumes. Oxides of carbon. Acetone vapours can form flammable mixtures with air. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Can form explosive mixture with air particularly in empty uncleaned receptacles.
5.3 Advice for fire-fighters	Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours.
6.2 Environmental precautions	Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere.
6.3 Methods and material for containment and cleaning up	Use non-sparking equipment when picking up flammable spill. Avoid contact with plastic. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do NOT absorb in saw-dust or other combustible absorbents. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste (2008/98/EEC).
6.4 Reference to other sections	See Section: 8, 13

7. SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Take precautionary measures against static discharge. Do not use sparking
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7.2 Conditions for safe storage, including any incompatibilities	tools. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid contact with skin, eyes or clothing. Do not breathe vapour. 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. Ground/bond container and receiving equipment. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Ambient. Stable under normal conditions. Keep away from: Oxidizing agents (May cause fire), Alkalis, Bases, Acids (Concentrated nitric and sulfuric acid mixtures), Amines, chloroform, chlorine compounds and potassium t-butoxide. Can react with Rubber, plastic and Copper.
Storage temperature	
Storage life	
Incompatible materials	
7.3 Specific end use(s)	PC14 Metal surface treatment products, including galvanic and electroplating products. See Section: 1.2.

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 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
Acetone	67-64-1	500	1210	1500	3620	WEL
Methyl Ethyl Ketone	78-93-3	200	600	300	899	WEL

Note: WEL: Workplace Exposure Limit (UK HSE EH40)

8.1.2 Biological limit value

Not established.

8.1.3 PNECs and DNELs

Not established.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Have available eyewash bottle with clean water.

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

General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. 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 (EN166).

Skin protection



Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Unsuitable gloves materials: Can react with Rubber and plastic.

Body protection: Flame-resistant antistatic protective clothing. Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment.

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Thermal hazards

Not applicable.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear-Yellowish Liquid.
Odour	Acetone
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	95°C
Initial boiling point and boiling range	56.6°C
Flash point	20°C [Closed cup] (Acetone)
Evaporation rate	7.7 (BuAc = 1)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Upper) (%v/v): 12.8 (Acetone) Flammable Limits (Lower) (%v/v): 2.5 (Acetone)
Vapour pressure	400 mmHg @ 39.5°C
Vapour density	2.0 (Air = 1)
Relative density	0.79 (H ₂ O=1)
Solubility(ies)	Completely miscible with water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information

Volatile Organic Compound Content: 76.8%

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Stability and reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Highly flammable liquid and vapour. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. May form explosive mixture with air particularly in empty uncleaned receptacles.
10.4 Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Do not use sparking tools.
10.5 Incompatible materials	Keep away from: Oxidizing agents (May cause fire), Alkalis, Bases, Acids (Concentrated nitric and sulfuric acid mixtures), Amines, chloroform, chlorine compounds and potassium t-butoxide. Can react with Rubber, plastic and Copper.
10.6 Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Oxides of carbon.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 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.

Inhalation

Based upon the available data, the classification criteria are not met.

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Skin Contact	Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l. 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	Skin Irrit. 2: Causes skin irritation.
Serious eye damage/irritation	Eye Irrit. 2: Causes serious eye irritation.
Respiratory or skin sensitization	Skin Sens. 1: May cause an allergic skin reaction.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	STOT SE 3: May cause drowsiness or dizziness.
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Aspiration hazard	Based upon the available data, the classification criteria are not met.
11.2 Other information	None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Aquatic Chronic 3: Harmful to aquatic life with long lasting effects. Estimated Mixture LC50 > 10 to ≤ 100 mg/l (Fish)
12.2 Persistence and degradability	No data for the mixture as a whole. Part of the components are poorly biodegradable.
12.3 Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4 Mobility in soil	The product is predicted to have high mobility in soil (completely miscible with water). May evaporate quickly.
12.5 Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6 Other adverse effects	None known.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Do not release undiluted and unneutralised to the sewer. This material and its container must be disposed of as hazardous waste (2008/98/EEC). Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
13.2 Additional Information	Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

	ADR/RID / IMDG / IATA
14.1 UN number	UN 1090
14.2 UN Proper Shipping Name	ACETONE (77% MIXTURE)
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	Not classified as a Marine Pollutant / Environmentally hazardous substance
14.6 Special precautions for user	See Section: 2
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
14.8 Additional Information	None.

15. SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1 EU regulations	
Substances of Very High Concern (SVHCs)	None
15.1.2 National regulations	
Wassergefährdungsklasse (Germany)	Water hazard class: 3
15.2 Chemical Safety Assessment	Not available.

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16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

References: Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Acetone (CAS# 67-64-1), 4,4'Sulfonyldianiline (CAS# 80-08-0) and Methyl ethyl ketone (CAS# 78-93-3). Existing ECHA registration(s) for Acetone (CAS# 67-64-1) 4,4'Sulfonyldianiline (CAS# 80-08-0) and Methyl ethyl ketone (CAS# 78-93-3), and the Classification and Labelling Inventory for Epoxy Resin Novalac (CAS# 28064-14-4) and Boron Trifluoride Complex (CAS# 75-23-0).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Flam. Liq. 2; H225	Flash Point [Closed cup] Test Result/ Boiling Point (°C)
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Irrit. 2; H319	Threshold Calculation
STOT SE 3; H336	Threshold Calculation
Aquatic Chronic 3; H412	Summation Calculation

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
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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Annex to the extended Safety Data Sheet (eSDS)

No information available.