

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 3 of 12

After inhalation

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

After contact with skin

Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Immediately get medical attention.

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist.

After ingestion

Do not induce vomiting. Rinse mouth thoroughly with water. Let water be swallowed in little sips (dilution effect). Never give anything by mouth to an unconscious person or a person with cramps. Immediately get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Dry extinguishing powder. Foam. Water spray. Carbon dioxide (CO₂).

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x).

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical resistant suit. In case of fire and/or explosion do not breathe fumes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray/stream to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation.

Do not breathe gas/vapour/spray. Avoid contact with skin, eye and clothing.

Wear personal protection equipment. (refer to chapter 8)

6.2. Environmental precautions

Do not empty into drains or the aquatic environment. Prevent spreading over great surfaces (e.g. by damming or installing oil booms). In case of leakage into waters, ground or the drainage system, the appropriate authorities must be informed.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Ventilate affected area.

Treat the assimilated material according to the section on waste disposal.

Clear contaminated area thoroughly.

6.4. Reference to other sections

See protective measures under point 7 and 8.

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 4 of 12

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Provide adequate ventilation.
Wear suitable protective clothing. (Refer to chapter 8.)

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

Do not breathe gas/vapour/spray. Avoid contact with skin, eye and clothing.
General protection and hygiene measures: refer to chapter 8

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

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

Advice on storage compatibility

Do not store together with: Explosives. Oxidizing solids. Oxidizing liquids. Organic peroxides. Self-reactive substances and mixtures. Radioactive substances. Infectious substances.

Further information on storage conditions

Protect against: Light. UV-radiation/sunlight. heat. cooling. moisture.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****8.2. Exposure controls****Appropriate engineering controls**

In case of open handling, use devices with built-in suction where possible. If suction of the immediate vicinity is impossible or insufficient, adequate airing of the working place must be ensured.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective and hygiene measures

Always close containers tightly after the removal of product. Do not eat, drink, smoke or sneeze at the workplace. Wash hands before breaks and at the end of work. Remove contaminated clothing immediately and dispose off safely. Wash contaminated clothing prior to re-use. Used working clothes should not be used outside the work area. Street clothing should be stored separately from work clothing. Protect skin by using skin protective cream.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses. DIN EN 166

Hand protection

Pull-over gloves of rubber. DIN EN 374
Suitable material:
(Breakthrough time \geq 480 min, penetration time (maximum wearing period): 160 min)
Butyl rubber. (0,5 mm)
Before using check leak tightness / impermeability. In case of reutilization, clean gloves before taking

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 5 of 12

off and store in well-aired place.

In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

Skin protection

Suitable protection of the body: Protective clothing:

Respiratory protection

Respiratory protection required in case of:
insufficient ventilation.

Generation/formation of aerosols

Generation/formation of mist

exceeding critical value

Suitable respiratory protective equipment: Combination filter device (DIN EN 141).. Type : A / P2/P3

The filter class must be suitable for the maximum contaminant concentration

(gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

Environmental exposure controls

Do not empty into drains or the aquatic environment.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	Green
Odour:	characteristic

Test method

pH-Value:	not determined
-----------	----------------

Changes in the physical state

Melting point:	not determined
----------------	----------------

Initial boiling point and boiling range:	not determined
--	----------------

Flash point:	not determined
--------------	----------------

Explosive properties

none/none

Lower explosion limits:	not determined
-------------------------	----------------

Upper explosion limits:	not determined
-------------------------	----------------

Oxidizing properties

none/none

Vapour pressure:	not determined
------------------	----------------

Density:	not determined
----------	----------------

Viscosity / dynamic:	not determined
----------------------	----------------

9.2. Other information

No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

Stable under normal storage and handling conditions.

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 6 of 12

10.3. Possibility of hazardous reactions

No information available.

10.4. Conditions to avoid

Protect against: Light. UV-radiation/sunlight. heat. cooling. moisture.

10.5. Incompatible materials

Materials to avoid: Strong acid. Oxidizing agents, strong. Alkalis (alkalis), concentrated.

10.6. Hazardous decomposition productsCan be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x).**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Toxicocinetics, metabolism and distribution**

No information available.

Acute toxicity

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

Acute toxicity

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
27813-02-1	methacrylic acid, monoester with propane-1,2-diol	oral	LD50	>2000 mg/kg	Rat.	ECHA Dossier
		dermal	LD50	>5000 mg/kg	Rabbit.	ECHA Dossier
79-10-7	acrylic acid, prop-2-enoic acid	oral	ATE	500 mg/kg		
		dermal	LD50	> 294 mg/kg	Rabbit.	RTECS
		inhalative (4 h) vapour	LC50	>5,1 mg/l	Rat.	ECHA Dossier
		inhalative aerosol	ATE	1,5 mg/l		
80-15-9	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide	oral	LD50	382 mg/kg	Rat.	IUCLID
		dermal	LD50	500 mg/kg	Rat.	RTECS
		inhalative (4 h) vapour	LC50	(200) mg/l	Mouse.	IUCLID
		inhalative aerosol	ATE	0,5 mg/l		
114-83-0	2'-Phenylacetohydrazide	oral	LD50	270 mg/kg	Mouse.	

Irritation and corrosivity

Causes severe skin burns and eye damage.

Sensitising effects

May cause an allergic skin reaction. (methacrylic acid, monoester with propane-1,2-diol), (Aliphatic urethane acrylate), (2'-Phenylacetohydrazide)

Respiratory or skin sensitisation:

People who suffer from skins problems, asthma, allergies, chronic or recurring respiratory illnesses must not be deployed in processes, which use this substance.

STOT-single exposure

May cause respiratory irritation. (2'-Phenylacetohydrazide)

Severe effects after repeated or prolonged exposure

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 7 of 12

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

methacrylic acid, monoester with propane-1,2-diol:

Subchronic oral toxicity (90d, Rat.) NOAEL = 300 mg/kg(bw)/day; literature information: ECHA Dossier

acrylic acid, prop-2-enoic acid:

Subchronic oral toxicity (90d, Rat.) NOAEL = 40 mg/kg; literature information: ECHA Dossier

Subchronic inhalative toxicity (90d, Rat.) LOAEC = 0,015 mg/l; literature information: ECHA Dossier

cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide:

Subchronic inhalative toxicity (Rat.) NOAEC = 31 mg/m³; literature information: ECHA Dossier

Carcinogenic/mutagenic/toxic effects for reproduction

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

methacrylic acid, monoester with propane-1,2-diol:

In-vitro mutagenicity: in vitro mammalian chromosome aberration test = positive. literature information:

Mutation Research 517 (1-2): 187-198

OECD Guideline 471 (Bacterial Reverse Mutation Assay) = negative. literature information: ECHA Dossier

OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay) = negative. literature information: ECHA Dossier

OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) = negative. literature information: ECHA Dossier

In-vivo mutagenicity: OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) = negative.

literature information: ECHA Dossier

Carcinogenicity: (Rat.) NOAEC = >2,05 mg/l; literature information: ECHA Dossier

Developmental toxicity/teratogenicity (Rat.) NOAEL = 50 mg/kg(bw)/day; literature information: ECHA Dossier

acrylic acid, prop-2-enoic acid:

In-vitro mutagenicity: OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) = negative.

literature information: ECHA Dossier

In-vivo mutagenicity: No experimental indications of mutagenicity in-vivo exist. literature information: ECHA Dossier

Carcinogenicity: (Mouse.) NOAEL = >10 mg/kg(bw)/day; literature information: ECHA Dossier

Developmental toxicity/teratogenicity (Rat.) NOAEC = 0,075 mg/l; literature information: ECHA Dossier

cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide:

In-vitro mutagenicity: OECD Guideline 471 (Bacterial Reverse Mutation Assay) = positive. literature information: ECHA Dossier

No experimental indications of mutagenicity in-vivo exist. literature information: ECHA Dossier

Aspiration hazard

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

Specific effects in experiment on an animal

No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 8 of 12

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
27813-02-1	methacrylic acid, monoester with propane-1,2-diol					
	Acute fish toxicity	LC50	833 mg/l	96 h	Scophthalmus maximus	
	Acute crustacea toxicity	EC50	>143 mg/l	48 h	Daphnia magna	ECHA Dossier
79-10-7	acrylic acid, prop-2-enoic acid					
	Acute fish toxicity	LC50	27 mg/l	96 h	Onchorhynchus mykiss	ECHA Dossier
	Acute algae toxicity	ErC50	0,13 mg/l	72 h	Desmodesmus subspicatus	MSDS extern
	Acute crustacea toxicity	EC50	95 mg/l	48 h	Daphnia magna	ECHA Dossier
80-15-9	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide					
	Acute fish toxicity	LC50	3,9 mg/l	96 h	Oncorhynchus mykiss	ECHA Dossier
	Acute algae toxicity	ErC50	3,1 mg/l	72 h	Desmodesmus subspicatus	ECHA Dossier
	Acute crustacea toxicity	EC50	18,84 mg/l	48 h	Daphnia magna	ECHA Dossier

12.2. Persistence and degradability

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
27813-02-1	methacrylic acid, monoester with propane-1,2-diol			
	OECD 301C / ISO 9408 / EWG 92/69 Anhang V, C.4-F	>81%	28	ECHA Dossier
	Easily biodegradable (concerning to the criteria of the OECD)			
80-15-9	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide			
	OECD 301B / ISO 9439 / EWG 92/69 Anhang V, C.4-C	3%	28	ECHA Dossier
	Not easily bio-degradable (according to OECD-criteria).			

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
27813-02-1	methacrylic acid, monoester with propane-1,2-diol	0,97
79-10-7	acrylic acid, prop-2-enoic acid	0,35
80-15-9	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide	2,16

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

No data available

Further information

Do not empty into drains or the aquatic environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Waste disposal according to official state regulations. Consult the local waste disposal expert about waste disposal. Cleaned containers may be recycled.

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 9 of 12

Waste disposal number of waste from residues/unused products

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other dangerous substances
Classified as hazardous waste.


Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Contaminated packaging

Handle contaminated packaging in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number:	UN 1760
14.2. UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (acrylic acid, prop-2-enoic acid; cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8
	
Classification code:	C9
Special Provisions:	274
Limited quantity:	1 L
Transport category:	2
Hazard No:	80
Tunnel restriction code:	E

Other applicable information (land transport)

Excepted quantity: E2

Inland waterways transport (ADN)

14.1. UN number:	UN 1760
14.2. UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (acrylic acid, prop-2-enoic acid; cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 10 of 12



Classification code: C9
Special Provisions: 274
Limited quantity: 1 L

Other applicable information (inland waterways transport)

Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S.
(Acrylic acid; Cumene hydroperoxide)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
Hazard label: 8



Marine pollutant: NO
Special Provisions: 274
Limited quantity: 1 L
EmS: F-A, S-B

Other applicable information (marine transport)

Excepted quantity: E2

Air transport (ICAO)

14.1. UN number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S.
(Acrylic acid; Cumene hydroperoxide)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
Hazard label: 8



Special Provisions: A3 A803
Limited quantity Passenger: 0.5 L
IATA-packing instructions - Passenger: 851
IATA-max. quantity - Passenger: 1 L
IATA-packing instructions - Cargo: 855
IATA-max. quantity - Cargo: 30 L

Other applicable information (air transport)Passenger-LQ: Y840
Excepted quantity: E2**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

refer to chapter 6-8

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 11 of 12

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

irrelevant

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

1999/13/EC (VOC): No information available. VOC Directive 2004/42/EC: No information available.

Additional information

The preparation is dangerous in the sense of Directive 1999/45/EC.

This preparation is hazardous in the sense of regulation (EC) No 1272/2008 [GHS].

Not subject to regulation 96/82/EC.

REACH 1907/2006 Appendix XVII, No 3

National regulatory information

Employment restrictions: Observe employment restrictions for young people.

Water contaminating class (D): 2 - water contaminating

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

Rev. 1,00, 16.12.2014, Initial release

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the

International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations

Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No observed adverse effect level

Full text of R phrases referred to under Sections 2 and 3

07	May cause fire.
10	Flammable.
20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
21/22	Harmful in contact with skin and if swallowed.
23	Toxic by inhalation.
25	Toxic if swallowed.
34	Causes burns.
35	Causes severe burns.
36	Irritating to eyes.

Delta D88 High Temperature Retaining Adhesive

Product code: D88

Page 12 of 12

36/37/38	Irritating to eyes, respiratory system and skin.
38	Irritating to skin.
43	May cause sensitisation by skin contact.
48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
50	Very toxic to aquatic organisms.
51	Toxic to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.

Full text of H statements referred to under Sections 2 and 3

H226	Flammable liquid and vapour.
H242	Heating may cause a fire.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)