



# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 2/14/2023 Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product code : 8880HOT

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

KARCHER NORTH AMERICA  
6398 N Karcher Way  
Aurora, 80239  
United States  
T 303-738-2400  
[info@karcherna.com](mailto:info@karcherna.com)

#### 1.4. Emergency telephone number

Emergency number : 800-535-5053  
For Chemical Emergency Call INFOTRAC 24hr/day 7days/week  
Within USA and Canada: 800-535-5053  
Outside USA and Canada: 1-352-323-3500  
(collect calls accepted)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture


##### GHS US classification

Skin corrosion/irritation Category 1	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Hazardous to the aquatic environment – Acute Hazard Category 3	H402	Harmful to aquatic life

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) : 

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H314 - Causes severe skin burns and eye damage  
H318 - Causes serious eye damage  
H402 - Harmful to aquatic life

Precautionary statements (GHS US) : P260 - Do not breathe dust, fume, gas, mist, spray, vapors.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves, protective clothing, eye protection, face protection.  
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER, a doctor.  
P363 - Wash contaminated clothing before reuse.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : None under normal conditions.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%
ALKYL (C10-C16) BENZENESULFONIC ACID	CAS-No.: 68584-22-5	40.845-45.383
ETHOXYDIGLYCOL	CAS-No.: 111-90-0	10-20
ALCOHOLS, C6-C12, ETHOXYLATED	CAS-No.: 68439-45-2	5-0
BENZENE, C10-C13-ALKYL DERIVATIVES	CAS-No.: 67774-74-7	0.454-1.361
SULFURIC ACID	CAS-No.: 7664-93-9	0.454-1.361

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.  
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Burns.  
Symptoms/effects after eye contact : Serious damage to eyes.  
Symptoms/effects after ingestion : Burns.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

#### 5.2. Specific hazards arising from the chemical

Fire hazard : No fire hazard.  
Explosion hazard : No direct explosion hazard.  
Hazardous decomposition products in case of fire : Toxic fumes may be released.

#### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Do not enter fire area without proper protective equipment, including respiratory protection.  
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not handle until all safety precautions have been read and understood.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust, fume, gas, mist, spray, vapors.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.  
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.  
Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.  
Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Avoid contact with skin and eyes. Do not breathe dust, fume, gas, mist, spray, vapors.

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hygiene measures : Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.  
Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>BREAKTHROUGH ADVANCED FORMULA PART B</b>	
No additional information available	
<b>ALKYL (C10-C16) BENZENESULFONIC ACID (68584-22-5)</b>	
No additional information available	
<b>BENZENE, C10-C13-ALKYL DERIVATIVES (67774-74-7)</b>	
No additional information available	
<b>SULFURIC ACID (7664-93-9)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA	0.2 mg/m <sup>3</sup> (Thoracic fraction)
<b>ALCOHOLS, C6-C12, ETHOXYLATED (68439-45-2)</b>	
No additional information available	
<b>ETHOXYDIGLYCOL (111-90-0)</b>	
No additional information available	

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

<b>Hand protection:</b>
Protective gloves
<b>Eye protection:</b>
Safety glasses
<b>Skin and body protection:</b>
Wear suitable protective clothing
<b>Respiratory protection:</b>
Wear respiratory protection.

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: red Orange
Odor	: Odorless
Odor threshold	: No data available
pH	: 0.27
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

#### ALKYL (C10-C16) BENZENESULFONIC ACID (68584-22-5)

LD50 dermal rabbit	> 5000 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 1.9 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

#### BENZENE, C10-C13-ALKYL DERIVATIVES (67774-74-7)

LD50 oral rat	> 5000 mg/kg body weight (Rat, Male / female, Experimental value, Oral)
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)

#### SULFURIC ACID (7664-93-9)

LD50 oral rat	2140 mg/kg body weight (Rat, Experimental value, Oral)
ATE US (oral)	2140 mg/kg body weight

#### ALCOHOLS, C6-C12, ETHOXYLATED (68439-45-2)

LD50 oral rat	> 1000 mg/kg (Rat, Oral)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit, Dermal)

#### ETHOXYDIGLYCOL (111-90-0)

LD50 dermal rabbit	9143 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))
ATE US (oral)	6031 mg/kg body weight
ATE US (dermal)	9143 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns.  
pH: 0.27  
Serious eye damage/irritation : Causes serious eye damage.  
pH: 0.27  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

#### SULFURIC ACID (7664-93-9)

National Toxicity Program (NTP) Status	Known Human Carcinogens
--	-------------------------

Reproductive toxicity : Not classified  
STOT-single exposure : Not classified

#### ETHOXYDIGLYCOL (111-90-0)

STOT-single exposure	May cause drowsiness or dizziness.
----------------------	------------------------------------

STOT-repeated exposure : Not classified

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>ALKYL (C10-C16) BENZENESULFONIC ACID (68584-22-5)</b>	
NOAEL (oral, rat, 90 days)	500 mg/kg body weight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	> 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after skin contact	: Burns.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: Burns.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Harmful to aquatic life.

<b>BENZENE, C10-C13-ALKYL DERIVATIVES (67774-74-7)</b>	
LC50 - Fish [1]	> 10 µg/l (Equivalent or similar to OECD 203, 14 day(s), Brachydanio rerio, Semi-static system, Experimental value, GLP)
EC50 - Crustacea [1]	> 0.041 mg/l (EU Method C.2, 48 h, Daphnia magna, Fresh water, Experimental value, GLP)

<b>SULFURIC ACID (7664-93-9)</b>	
LC50 - Fish [1]	42 mg/l (96 h, Gambusia affinis)
EC50 - Crustacea [1]	29 mg/l (24 h, Daphnia magna)

<b>ETHOXYDIGLYCOL (111-90-0)</b>	
LC50 - Fish [1]	6010 mg/l (Equivalent or similar to OECD 203, 96 h, Ictalurus punctatus, Flow-through system, Fresh water, Experimental value, Lethal)
ErC50 algae	14861 mg/l (Equivalent or similar to OECD 201, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

### 12.2. Persistence and degradability

<b>BENZENE, C10-C13-ALKYL DERIVATIVES (67774-74-7)</b>	
Persistence and degradability	Readily biodegradable in water.

<b>SULFURIC ACID (7664-93-9)</b>	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

<b>ALCOHOLS, C6-C12, ETHOXYLATED (68439-45-2)</b>	
Persistence and degradability	Readily biodegradable in water.

<b>ETHOXYDIGLYCOL (111-90-0)</b>	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.2 g O <sub>2</sub> /g substance

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ETHOXYDIGLYCOL (111-90-0)	
Chemical oxygen demand (COD)	1.85 g O <sub>2</sub> /g substance
ThOD	1.9078849 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.11 (Calculated value)

### 12.3. Bioaccumulative potential

BENZENE, C10-C13-ALKYL DERIVATIVES (67774-74-7)	
BCF - Fish [1]	35 (Other, 96 h, Pisces, Flow-through system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	7.9 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

SULFURIC ACID (7664-93-9)	
Partition coefficient n-octanol/water (Log Pow)	-2.2 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

ALCOHOLS, C6-C12, ETHOXYLATED (68439-45-2)	
Partition coefficient n-octanol/water (Log Pow)	3.01 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

ETHOXYDIGLYCOL (111-90-0)	
Partition coefficient n-octanol/water (Log Pow)	-0.54 (Literature, 20 °C)
Bioaccumulative potential	Not bioaccumulative.

### 12.4. Mobility in soil

BENZENE, C10-C13-ALKYL DERIVATIVES (67774-74-7)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.34 (log Koc, Other, Experimental value)
Ecology - soil	Adsorbs into the soil.

ETHOXYDIGLYCOL (111-90-0)	
Surface tension	52 mN/m (25 °C)
Ecology - soil	Highly mobile in soil.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

- Regional legislation (waste) : Disposal must be done according to official regulations.  
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.



# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 14: Transport information

#### 14.1. UN number

DOT NA No : UN1760

#### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Corrosive liquids, n.o.s., (SULFONIC ACID DDBSA), 8, II

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT) : 8

Hazard labels (DOT) : 8



#### 14.4. Packing group

Packing group (DOT) : II

#### 14.5. Environmental hazards

Other information : No supplementary information available.

#### 14.6. Special precautions for user

##### DOT

UN-No.(DOT) : UN1760

DOT Packaging Exceptions (49 CFR 173.xxx) : 154 May ship in limited quantity of 12X24 ounce containers in accordance with 49CFR Part 100-185

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

SULFURIC ACID	CAS-No. 7664-93-9	0.454 – 1.361%
---------------	-------------------	----------------

# BREAKTHROUGH ADVANCED FORMULA PART B

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SULFURIC ACID (7664-93-9)	
CERCLA RQ	1000 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb

### 15.2. International regulations

SULFURIC ACID (7664-93-9)
Listed as carcinogen on NTP (National Toxicology Program)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.

## SECTION 16: Other information

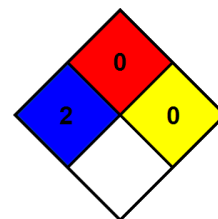
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases	
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H402	Harmful to aquatic life

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : X - Special handling directions

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.