Section 1. Identification

1.1 Product identifier
Product name : DAB Enhancer
Part No. : S1961, SK005, SK006
Validation date : 10/28/2016

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses : Laboratory use
Container type: Dispenser Pack
S1961 // DAB Enhancer // 30 mL & 110 mL
SK005 // DAB Enhancer // PD-L1 IHC nivolumab pharmDx // 34.5 mL
SK006 // DAB Enhancer // PD-L1 IHC 22C3 pharmDx // 34.5 mL
Reference number: SDS335

1.3 Details of the supplier of the safety data sheet
Supplier/Manufacturer : Dako North America, Inc.
6392 Via Real
Carpinteria, California 93013
United States
Tel: (805) 566-6655
www.Dako.com
SDS@Dako.com

1.4 Emergency telephone number
In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture
OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture
Not classified.

2.2 GHS label elements
Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.
Precautionary statements
Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

2.3 Other hazards
Hazards not otherwise classified : None known.

Date of issue : 10/28/2016
Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.
Section 5. Fire-fighting measures

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical
Hazardous thermal decomposition products
: In a fire or if heated, a pressure increase will occur and the container may burst.
: No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters
Special protective equipment for fire-fighters
: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
For emergency responders
: No action shall be taken involving any personal risk or without suitable training.
: Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

6.2 Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up
: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures
Advice on general occupational hygiene
: Put on appropriate personal protective equipment (see Section 8).
: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

: Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations
: Industrial applications, Professional applications.
Section 7. Handling and storage

Industrial sector specific solutions

Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls

Environmental exposure controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.
Color : Not available.
Odor : None
Odor threshold : Not available.

Date of issue : 10/28/2016
Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6 to 9</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable)</td>
<td>limits</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Easily soluble in the following materials:</td>
</tr>
<tr>
<td></td>
<td>cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

10.1 Reactivity                           | No specific test data related to reactivity available for this product or its ingredients. |
10.2 Chemical stability                   | The product is stable.                      |
10.3 Possibility of hazardous reactions   | Under normal conditions of storage and use, hazardous reactions will not occur.             |
10.4 Conditions to avoid                  | No specific data.                           |
10.5 Incompatible materials              | May react or be incompatible with oxidizing materials.                                    |
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                           | Not available.                             |
Irritation/Corrosion                     | Not available.                             |
Sensitization                           | Not available.                             |
Mutagenicity                            | Not available.                             |
Carcinogenicity                         | Not available.                             |

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Section 11. Toxicological information

**Reproductive toxicity**
Not available.

**Teratogenicity**
Not available.

**Specific target organ toxicity (single exposure)**
Not available.

**Specific target organ toxicity (repeated exposure)**
Not available.

**Aspiration hazard**
Not available.

**Information on the likely routes of exposure**

- **Inhalation**
  - No known significant effects or critical hazards.

- **Ingestion**
  - No known significant effects or critical hazards.

- **Skin contact**
  - No known significant effects or critical hazards.

- **Eye contact**
  - No known significant effects or critical hazards.

**General**
- No known significant effects or critical hazards.

**Carcinogenicity**
- No known significant effects or critical hazards.

**Mutagenicity**
- No known significant effects or critical hazards.

**Teratogenicity**
- No known significant effects or critical hazards.

**Developmental effects**
- No known significant effects or critical hazards.

**Fertility effects**
- No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **Eye contact**
  - No specific data.

- **Inhalation**
  - No specific data.

- **Skin contact**
  - No specific data.

- **Ingestion**
  - No specific data.

**Potential acute health effects**

- **Eye contact**
  - No known significant effects or critical hazards.

- **Inhalation**
  - No known significant effects or critical hazards.

- **Skin contact**
  - No known significant effects or critical hazards.

- **Ingestion**
  - No known significant effects or critical hazards.

**Potential chronic health effects**

- **General**
  - No known significant effects or critical hazards.

- **Carcinogenicity**
  - No known significant effects or critical hazards.

- **Mutagenicity**
  - No known significant effects or critical hazards.

- **Teratogenicity**
  - No known significant effects or critical hazards.

- **Developmental effects**
  - No known significant effects or critical hazards.

- **Fertility effects**
  - No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**
Not available.

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Section 11. Toxicological information

Section 12. Ecological information

12.1 Toxicity
Not available.

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil
Soil/water partition coefficient ($K_{OC}$) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods
Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Additional information : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

Special provisions
274, 331, 335, 375
# Section 14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>UN3082</td>
<td>Environmentally hazardous substance, liquid, n.o.s. (Copper sulphate). Marine pollutant (Copper sulphate) RQ (Copper sulphate)</td>
<td>9</td>
<td>III</td>
<td></td>
<td>Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.</td>
</tr>
<tr>
<td>TDG</td>
<td>UN3082</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Copper sulphate). Marine pollutant (Copper sulphate)</td>
<td>9</td>
<td>III</td>
<td></td>
<td>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark). Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.</td>
</tr>
</tbody>
</table>

**Reportable quantity**
20000 lbs / 9080 kg

Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

**Limited quantity**
Yes.

**Special provisions**
8, 146, 173, 335, IB3, T4, TP1, TP29

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## Section 14. Transport information

<table>
<thead>
<tr>
<th></th>
<th>UN3082</th>
<th>Environmentally hazardous substance, liquid, n.o.s. (Copper sulphate)</th>
<th>9</th>
<th>III</th>
<th>16, 99</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mexico</strong></td>
<td></td>
<td>SUBSTANCIAS LIQUIDAS POTENCIALMENTE PELIGROSAS PARA EL MEDIO AMBIENTE, N.E.P. (Copper sulphate)</td>
<td></td>
<td></td>
<td>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td>UN3082</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Copper sulphate). Marine pollutant (Copper sulphate)</td>
<td>9</td>
<td>III</td>
<td>This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.</td>
</tr>
<tr>
<td><strong>IATA</strong></td>
<td>UN3082</td>
<td>Environmentally hazardous substance, liquid, n.o.s. (Copper sulphate)</td>
<td>9</td>
<td>III</td>
<td>This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.</td>
</tr>
</tbody>
</table>

**Special provisions**
- 274, 331, 335

**Emergency schedules (EmS)**
- F-A, S-F

**Passenger and Cargo Aircraft**
- Quantity limitation: 450 L
- Packaging instructions: 964
  - Cargo Aircraft Only
    - Quantity limitation: 450 L
    - Packaging instructions: 964

**Limited Quantities - Passenger Aircraft**
- Quantity limitation: 30 kg
- Packaging instructions: Y964

**Special provisions**
- A97, A158, A197

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Section 14. Transport information

PG* : Packing group

Section 15. Regulatory information

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

U.S. Federal regulations : United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act (CWA) 307 : Copper sulphate
Clean Water Act (CWA) 311 : Copper sulphate

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed
Clean Air Act Section 602 Class I Substances : Not listed
Clean Air Act Section 602 Class II Substances : Not listed
DEA List I Chemicals (Precursor Chemicals) : Not listed
DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients
No products were found.

SARA 304 RQ : Not applicable.
SARA 311/312

Classification : Not applicable.
Composition/information on ingredients
No products were found.

State regulations

Massachusetts : None of the components are listed.
New York : None of the components are listed.
New Jersey : None of the components are listed.
Pennsylvania : None of the components are listed.

California Prop. 65
No products were found.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol (Annexes A, B, C, E)
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

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Section 15. Regulatory information

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list
Australia : All components are listed or exempted.
Canada inventory : All components are listed or exempted.
China : All components are listed or exempted.
Europe : All components are listed or exempted.
Japan : Japan inventory (ENCS): All components are listed or exempted.
         Japan inventory (ISHL): All components are listed or exempted.
Malaysia : All components are listed or exempted.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Turkey : Not determined.

Section 16. Other information

History
Date of issue : 10/28/2016
Date of previous issue : 10/30/2015.
Version : 2

\(\wedge\) Indicates information that has changed from previously issued version.

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