OP/Carbamate

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• Intended Use

For the detection of a wide range of organophosphates including thiophosphate, and carbamate pesticides in water, (drinking water, ground water, surface water and well water). This plate assay can also be used for testing collected dislodgeable residues from a surface wash, as well as pesticide residues prepared from dried extracts (please contact Abraxis technical support for information).

• Principle

The test is a qualitative, colorimetric assay (modification of the Ellman method) for the detection of organophosphates and carbamates, based on a modification of their inhibition of the enzyme Acetyl Cholinesterase (ACh-E). ACh-E hydrolyzes acetylthiocholine (ATC), which reacts with 5,5'-Dithio-bis(2-Nitrobenzoic Acid) [DTNB] to produce a yellow color which is then read at 405 nm. If OP or Carbamate pesticides are present in a sample, they will inhibit ACh-E reducing or eliminating color formation depending on their concentration.

Detection limits of the various OP/C pesticides differ depending on their ability to inhibit the enzyme (refer to Sensitivity table). If it has been established that only a single OP/C is present, the test can be used in conjunction with appropriate standards for quantitative testing.

• Reagents

The Abraxis OP/Carbamate Kit contains the following items:

(1) 1 Microtiter plate with removable 8 strips of 12 wells and a stripholder.
(2) 1 vial (blue dot), used as diluent for the substate (ATC), 5 ml.
(3) 1 vial (green dot), used as diluent for the lyophilized ACh-E, 3 ml.
(4) 1 Amber vial with 1 ml of positive pesticide control-5 ppb Diazinon in 50% MEOH
(5) 1 Amber vial (orange fluorescent dot), 1 ml of OXIDIZER .
(6) Assay Buffer and Oxidizer Diluent (orange fluorescent dot), 10 ml.
(7) 1 vial (red dot), 3 ml.-NEUTRALIZER
(8) 1 vial (green dot) ACh-E, lyophilized
(9) 1 vial (blue dot), SUBSTRATE, ATC, lyophilized
(10) 1 vial (yellow fluorescent dot), CHROMOGEN (DTNB) 3 ml.
(11) 1 vial (purple dot),STOPPING SOLUTION, 3 ml.
(12) 1 Amber vial with 1ml of negative pesticide control-50% MEOH.

• Reagent Storage and Stability

Store all reagents at 2-8°C. Reagents may be used until the expiration date on the box.

Consult state, local and federal regulations for proper disposal of all reagents.

• Materials Required but Not Provided

In addition to the reagents provided, the following items are essential for the performance of the test:
Precision pipets capable of delivering 25-1000 ul and tips
Microplate* or strip reader capable of reading absorbance between 405-450 nm
Test tube or vial to use for diluting of Oxidizer

* Please contact Abraxis for supplier information.

• Sample Information

(1) This procedure is recommended for use with samples in a matrix of 50% MEOH. Other sample matrices may require modifications to the procedure and should be thoroughly validated (contact Abraxis Technical support for information and guidance). If testing water samples, the samples must be diluted with and equal volume of methanol upon collection and before testing.

(2) Samples may be prepared as dry extracts (solvent evaporated residues) or as residues dislodged from surface washes (see Sample Preparation under Assay Procedure). Other samples may require modifications to the procedure and should be validated.All samples to be analyzed should be in a 50% MEOH matrix.

(3) Samples containing gross particulate matter should be filtered (e.g. 0.2 um Anotop™ 25 Plus, Whatman, Inc.) to remove particles.

Pigmented samples may obscure color and cause some interferences, therefore a negative control should be prepared in a similar matrix.

• Reagent Preparation

All reagents must be allowed to come to room temperature.

(1) **ACh-E** – Add the 3 ml of the ACh-E diluent to the lyophilized enzyme, cap vial and mix by shaking moderately. Allow at least 5 minutes for the ACh-E to go into solution before use in the assay.

(2) **Oxidizer** –Determine the amount of diluted oxidizer needed for the assay. Dilute the oxidizer (1 part oxidizer to 9 parts oxidizer diluent) and mix by shaking moderately. **This diluted oxidizer must be made fresh for each assay**.

(3) **Substrate** (ATC) – Add 3 ml of ATC diluent to the lyophilized ATC, cap the vial and mix by shaking moderately.

• Procedural Notes and Precautions

As with all assays, a consistent technique is the key to optimal performance. To obtain the greatest precision, be sure to treat each plate to mix the contents well in an identical manner. Swirl by moving the strip holder in a circular motion on the benchtop. Be careful not to spill contents of the wells.

Add reagents directly to the bottom of the well while **avoiding contact between the reagents and the pipet tip**. This will help assure consistent quantities of reagent in the test mixture.

Avoid cross-contaminations and carryover of reagents by using clean pipet tips for each sample addition and by avoiding contact between reagent droplets on the wells and pipet tips.

If performing the assay outdoors, avoid direct sunlight.

Do not use any reagents beyond their stated shelf life.

Avoid contact of reagents with skin and mucous membranes. If a reagent comes in contact with skin, wash with water.

• Limitations

The Abraxis OP/Carbamate Assay will detect organo-phosphates and carbamates to different degrees. Refer to specificity table for data . The Abraxis OP/Carbamate Assay kit provides screening results. As with any analytical technique (GC, HPLC, etc...) positive results requiring some action should be confirmed by an alternative method.

• Quality Control

A high positive pesticide control is provided with the Abraxis OP/Carbamate Assay kit (5 ppb of Diazinon in 50% MEOH). It is recommended that it be included in every run and treated in the same manner as unknown samples. Acceptable limits should be established by each laboratory.

• Assay Procedure

Read Reagent Preparation, Procedural Notes and Precautions before proceeding.

1. Add 50 ul of assay buffer (orange fluorescent dot) to microwells to be used in the assay.
2. Add 25 uL of the appropriate **control or sample** to designated assay wells, swirl plate to mix -15 seconds.

Well Number	Contents of Tube
A1,2	Negative Control
A3,4	Positive Control
A5,6	Sample 1
A7,8	Sample 2
B1,2	Sample 3
B3,4	Sample 4
B5,6	Sample 5
B7,8	Sample 6

3. Add 25 ul of **diluted Oxidizer** into assay each wells, swirl plate to mix-15 seconds. Incubate for 5 minutes at 70º F +/- 20 degrees
4. Add 25 ul of **Neutralizer** (red dot) into each assay well, swirl plate to mix-15 seconds.
5 Add 25 ul of **ACh-E** (green dot) into each assay well, swirl to mix plate-15 seconds. Incubate 15 minutes at 70° F +/- 20 degrees.
6. Add 25 ul of **Substrate**-ATC (blue dot) into assay each well, swirl plate to mix-15 seconds.
7. Add 25 ul of **Chromogen** – DTNB (yellow fluorescent dot) into each assay well, swirl plate to mix-15 seconds. Incubate 30 minutes at 70° F +/- 20 degrees
8. Add 25 ul of **Stopping Solution** (purple dot) into each assay well, swirl plate to mix-15 seconds. Read at 405 nm (optimum wavelength) or 450 nm. Be sure no bubbles are viscible in any well. The bubbles cause erroneous readings.

• Results

The negative control and any sample that has no detectable organophosphate or carbamate will develop a dark yellow color. Any sample with a detectable organophosphate or carbamate residue will have a reduced color development compared to the negative control. A 20% inhibition of color indicates the presence of a organophosphate or carbamate at or above the limit of detection (please refer to sensitivity table).

NOTE: If the negative control does not result in a yellow color, the test is invalid and should be repeated.

Limit of Detection Pattern (Sensitivity)

Limit of Detection of the Abraxis OP/Carbamate Test is estimated at 20% inhibition (IC 20) of color development

Compound in 50% MEOH

Organophosphate	PPB
Azinphos methyl	0.3
Chlorpyrifos methyl	0.4
Chlorpyrifos ethyl	0.5
Diazinon	0.6
Dichlorvos	0.5
Dicrotophos	2.4
Disulfoton	40
Ethion	0.6
Malathion	1.2
Parathion	0.8
Phorate	1.0
Phosmet	1.2

Carbamates	PPB
Aldicarb	25
Carbaryl	206
Carbafuran	0.9

• Performance Data

Precision

Three pools were spiked with an organophosphate pesticide at various levels and then assayed using the Abraxis OP/Carbamate Plate Assay. The following results were obtained when assayed in duplicate and run five times in each of 15 assays.

Between Assay Precision

	Pool 1 (ppb)	Pool 2 (ppb)	Pool 3 (ppb)
X	0.51	1.06	1.54
SD	0.04	0.035	0.07
CV%	7.86	3.35	4.48

Within Assay Precision

	Pool 1 (ppb)	Pool 2 (ppb)	Pool 3 (ppb)
X	0.53	1.07	1.53
SD	0.02	0.03	0.05
CV%	3.9	3.1	3.5

• Ordering information

Abraxis OP/Carbamate Assay Kit 96 Tests PN 550055

• Assistance

For ordering or technical assistance contact:

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Phone : (215) 357-3911
Fax: (215) 357-5232
Email: info@abraxiskits.com
WEB: www.abraxiskits.com

• General Limited Warranty

Abraxis LLC warrants the products manufactured by the Company, against defects and workmanship when used in accordance with the applicable instructions for a period not to extend beyond the product's printed expiration date. **Abraxis makes no other warranty, expressed or implied. There is no warranty of merchantability or fitness for a particular purpose.**

OP/Carbamate Plate Assay

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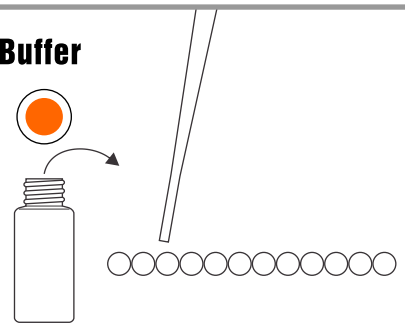
1. Addition of Assay Buffer

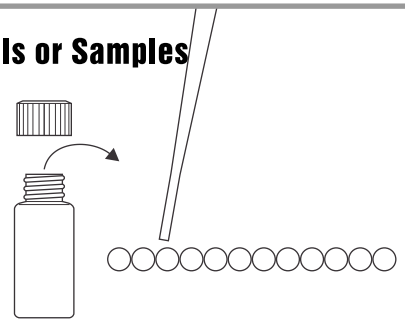
Add 50 uL of the Assay Buffer (ORANGE Dot) to each assay well.



2. Addition of Controls or Samples

Add 25 uL of the appropriate control or sample to each assay well.

Swirl wells to mix for 15 seconds.

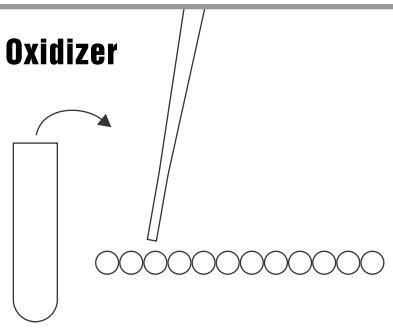


3. Addition of Diluted Oxidizer

Add 25 uL of diluted oxidizer to each assay well.

Swirl wells to mix for 15 seconds.

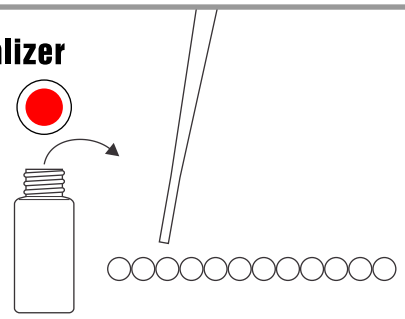
Incubate for 5 minutes at 70 degrees F +/- 20 degrees.



4. Addition of Neutralizer

Add 25 uL of neutralizer (RED dot) to each assay well.

Swirl wells to mix for 15 seconds.

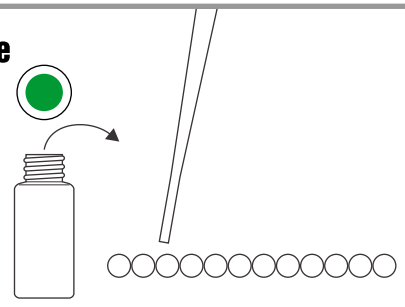


5. Addition of Enzyme

Add 25 uL of ACh-E (GREEN dot) to each assay well.

Swirl wells to mix for 15 seconds.

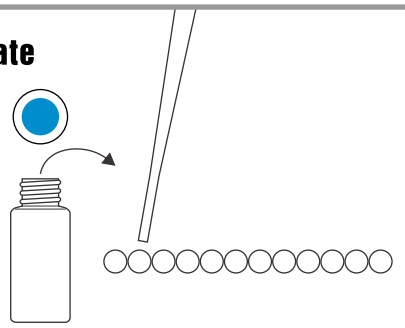
Incubate for 15 minutes at 70 degrees F +/- 20 degrees.



6. Addition of Substrate

Add 25 uL of Substrate-ATC (BLUE dot) to each assay well.

Swirl wells to mix for 15 seconds.

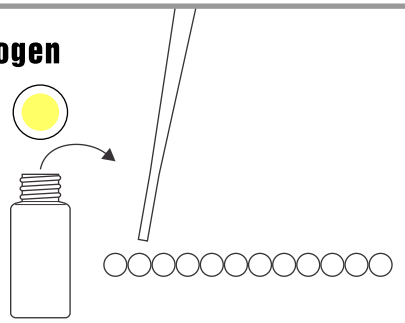


7. Addition of Chromogen

Add 25 uL of Chromogen-DTNB (YELLOW dot) to each assay well.

Swirl wells to mix for 15 seconds.

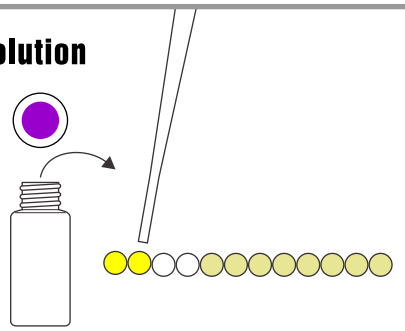
Incubate for 30 minutes at 70 degrees F +/- 20 degrees.



8. Addition of Stop Solution

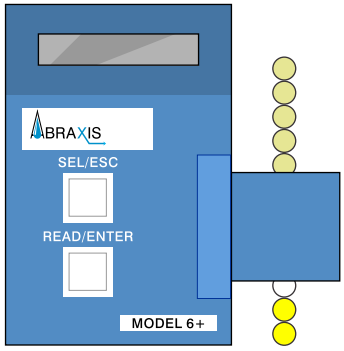
Add 25 uL of Stopping Solution (PURPLE dot) to each assay well.

Swirl wells to mix for 15 seconds.



9. Interpret Results

Read at 405nm (optimum wavelength) or 450nm. Be sure no bubbles are visible in any well as they will cause eroneous readings.



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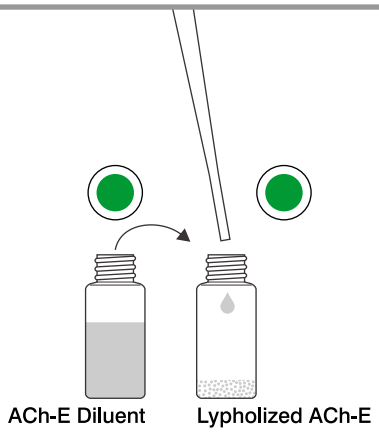
Reagent Preparation for OP/Carbamate Plate Assay

1. ACh-E

Transfer 3ml from the 7ml Petri vial (GREEN dot) containing ACh-E Diluent and place into the 7ml Petri vial (GREEN dot) containing lypholized ACh-E.

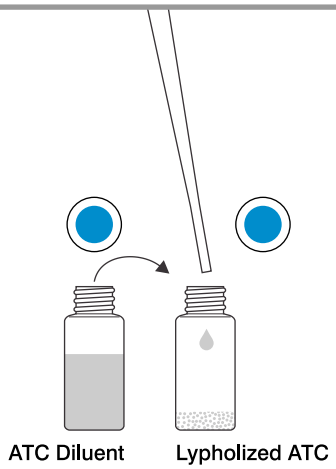
Allow at least 5 minutes for the ACh-E to go into solution before using in the Assay.



2. Substrate (ATC)

Transfer 3ml from 7ml Petri vial (BLUE dot) containing ATC Diluent and place into 7ml Petri vial (BLUE dot) containing lypholized ATC.

Allow at least 5 minutes for the ACh-E to go into solution before using in the Assay.

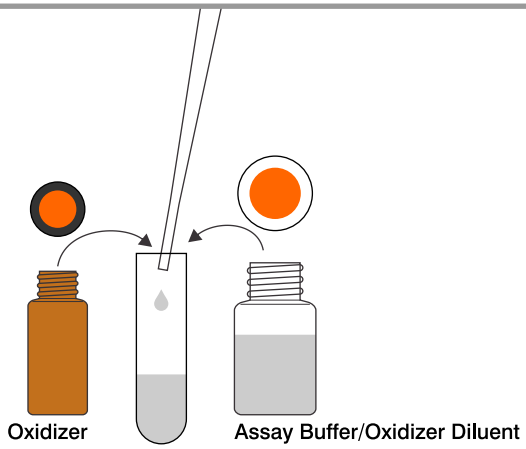


4. Addition of Oxidizer

Determine the amount of Diluted Oxidizer needed for the Assay.

Dilute the Oxidizer (AMBER bottle with ORANGE dot) 1 part Oxidizer to 9 parts Assay Buffer / Oxidizer Diluent (ORANGE dot) and mix by shaking moderately.

This diluted oxidizer must be made fresh for each Assay.



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Safety Data Sheet

Section 1: Product and Company Identification

1.1 Product Identifiers:
Product Name: Organophosphate/Carbamate (OP/C) Plate Kit
Product Code: 550055
1.2 Identified Use: Determination of Organophosphate/Carbamate (OP/C) in samples. **Restrictions on Use:** For research use only.
1.3 Company: Abraxis, Inc., 124 Railroad Drive, Warminster, PA 18974 USA, info@abraxiskits.com +1(215) 357-3911, FAX +1(215) 357-5232
1.4 Emergency Telephone Number: +1(215) 357-3911

Section 2: Hazard(s) Identification

2.1 Classification of the mixture:
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225 Highly flammable liquid and vapor
Acute toxicity, Oral (Category 3), H301 Toxic if swallowed
Acute toxicity, Inhalation (Category 3), H331 Toxic if inhaled
Acute toxicity, Dermal (Category 3), H311 Toxic in contact with skin
Specific target organ toxicity - single exposure (Category 1), H370 Causes damage to organs
HMIS Rating: Health hazard: 2, Chronic Health Hazard: *, Flammability: 3, Physical Hazard 0
NFPA Rating: Health hazard: 2, Fire Hazard: 3, Reactivity Hazard: 0
2.2 GHS Label elements, including precautionary statements:
Pictogram(s)

Signal word: Danger
Hazard statement(s):
H225 Highly flammable liquid and vapor.
H301 + H311 + H331 Toxic if swallowed, in contact with skin, or if inhaled
H370 Causes damage to organs.
Precautionary statement(s):
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/fume/gas/mist/vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection/face protection.
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician.
P307 + P311 If exposed: Call a POISON CENTER or doctor/physician.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS: None known.
2.4 Unknown acute toxicity: None known.

Section 3: Composition / Information on Ingredients

3.2 Mixtures: Mixture of the hazardous substance(s) listed below, with nonhazardous additions.

Hazardous component(s):
Name and Synonym(s): Methyl alcohol, MeOH, Methanol Formula: CH_4O Molecular weight: 32.04 g/mol
CAS No.: 67-56-1 EC-No.: 200-659-6
Classification: Flammable Liquid 2, Acute Toxicity 3; STOT SE 1; H225, H301 + H311 + H331, H370
Percentage in Mixture: 3.13%
For full text of H-Statements mentioned in this Section, see Section 2.

Section 4: First Aid Measures

4.1 Description of first aid measures: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
4.3 Indication of any immediate medical attention and special treatment needed: No data available. Treat symptomatically.

Section 5: Fire-fighting Measures

5.1 Suitable extinguishing media: Dry powder or sand **Unsuitable extinguishing media:** Do NOT use water jet
5.2 Special hazards arising from the substance or mixture: Carbon oxides
5.3 Advice for firefighters: Wear self-contained breathing apparatus for fire-fighting if necessary.
5.4 Further information: Use water spray to cool unopened containers.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Use personal protective equipment (see section 8). Avoid dust formation. Avoid breathing vapors, mist, dust, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.
6.2 Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
6.3 Methods and materials for containment and cleaning up: Contain spillage. Solids (if applicable): Pick up and arrange disposal without creating dust. Sweep up and shovel. Liquids (if applicable): Absorb with non-combustible liquid-binding material (sand, earth, diatomite, vermiculite). Keep in suitable, closed containers for disposal.
6.4 Reference to other sections: For information on safe handling see section 7.
For information on personal protection see section 8.
For information on disposal see section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling: See section 2. Avoid inhalation of vapors or mist, and avoid contact with skin and eyes. Wear appropriate personal protective equipment. Use explosion-proof equipment. Keep away from sources of ignition. Do not eat, drink, or smoke in work area. Take measures to prevent the buildup of electrostatic charge.
7.2 Precautions for safe storage: Keep container(s) tightly closed in a dry, well-ventilated place. Protect from physical damage. Opened containers must be carefully resealed and kept upright to prevent leakage. See label or product insert for appropriate storage temperature and additional specific information. Storage class (TRGS 510): Flammable liquids.
7.3 Specific end use(s): Other than use(s) specified in section 1, no other uses are stipulated.

Section 8: Exposure Controls / Personal Protection

8.1 Control parameters:
Component(s) with workplace control parameters
Methanol, CAS No. 67-56-1

Value	Control parameters	Basis
TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Headache Nausea Dizziness Eye damage		

Substances for which there is a Biological Exposure Index or Indices (see BEI section) Danger of cutaneous absorption		
STEL	250.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Headache Nausea Dizziness Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI section) Danger of cutaneous absorption		
TWA	200.000000 ppm; 260.000000 mg/m^3	USA. NIOSH Recommended Exposure Limits
Potential for dermal absorption		
ST	250.000000 ppm; 325.000000 mg/m^3	USA. NIOSH Recommended Exposure Limits
Potential for dermal absorption		
TWA	200.000000 ppm; 260.000000 mg/m^3	USA. Occupational Exposure Limits; (OSHA) - Table Z-1 Limits for Air Contaminants
The value in mg/m3 is approximate		
TWA	200 ppm; 260 mg/m^3	USA. NIOSH Recommended Exposure Limits
Potential for dermal absorption		
ST	250 ppm; 325 mg/m^3	USA. NIOSH Recommended Exposure Limits
Potential for dermal absorption		
TWA	200 ppm; 260 mg/m^3	USA. Occupational Exposure Limits; (OSHA) - Table Z-1 Limits for Air Contaminants
The value in mg/m3 is approximate		
STEL	250 ppm; 325 mg/m^3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
Skin notation		
TWA	200 ppm; 260 mg/m^3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
Skin notation		

Biological occupational exposure limits

Methanol, CAS No. 67-56-1

Parameters	Value	Biological specimen	Basis
Methanol	15.0000 mg/l	Urine	ACGIH – Biological Exposure Indices (BEI)
End of shift (As soon as possible after exposure ceases)			

Derived No Effect Level (DNEL)

Methanol, CAS No. 67-56-1

Application area	Exposure routes	Health effect	Value
Workers	Skin contact	Long-term systemic effects, Acute systemic effects	40mg/kg BW/d
Consumers	Skin contact	Long-term systemic effects, Acute systemic effects	8mg/kg BW/d
Consumers	Ingestion	Long-term systemic effects, Acute systemic effects	8mg/kg BW/d
Workers	Inhalation	Acute systemic effects, Acute local effects, Long-term systemic effects, Long-term local effects	260 mg/m^3
Consumers	Inhalation	Acute systemic effects, Acute local effects, Long-term systemic effects, Long-term local effects	50 mg/m^3

Predicted No Effect Concentration (PNEC)

Methanol, CAS No. 67-56-1

Compartment	Value
Soil	23.5 mg/kg
Marine water	15.4 mg/l
Fresh water	154 mg/l
Fresh water sediment	570.4 mg/kg
Onsite sewage treatment plant	100 mg/kg

8.2 Exposure controls:
Appropriate engineering controls: Provide adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Keep away from food and beverages.
Personal protective equipment
Eye protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin protection: Handle with chemical resistant gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Respiratory protection: Use a chemical fume hood or approved respiratory protection equipment.
Body protection: Lightweight, protective clothing to prevent skin exposure.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties of mixture
Appearance: Multiple
Odor: Characteristic
Odor Threshold: No data available
pH: Multiple
Melting point/freezing point: No data available
Initial boiling point and boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): No data available
Upper/lower flammability or explosive limits No data available
Vapor pressure: No data available
Vapor density: No data available
Relative density: No data available
Water solubility: Various
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: Not applicable
Decomposition temperature: No data available
Viscosity: No data available
Explosive properties: No data available
Oxidizing properties: No data available
9.2 Other information: No data available

Section 10: Stability and Reactivity

10.1 Reactivity: No data available
10.2 Chemical stability: Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions: No data available
10.4 Conditions to avoid: Keep away from open flame, hot surfaces, heat sources, and sources of ignition.
10.5 Incompatible materials: Acid chlorides, acid anhydrides, strong oxidizing agents, alkali metals, reducing agents, acids, peroxides
10.6 Hazardous decomposition products: No data available. In the event of fire: see section 5.

Section 11: Toxicological Information

11.1 Information on toxicological effects
To the best of our knowledge, the chemical, physical, and toxicological properties of this product have not been thoroughly investigated.
Acute toxicity (Methanol, CAS No. 67-56-1)**:**

Inhalation LC50 Inhalation - Rat - 4 h - 128.2 mg/l; LC50 Inhalation - Rat - 6 h - 87.6 mg/l; LD50 Dermal - Rabbit - 17,100 mg/kg
Ingestion LDLO Oral - Human - 143 mg/kg (Lungs, Thorax, or Respiration:Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea); LD50 Oral - Rat - 1,187 - 2,769 mg/kg
Skin contact Rabbit skin—no irritation
Eye contact Rabbit eye—no irritation
Respiratory or skin sensitization Maximization Test (GPMT)(OECD Test Guideline 406)--Guinea pig--does not cause skin sensitization
Aspiration hazard No data available

Mutagenicity (Methanol, CAS No. 67-56-1)**:** Ames test (*S. typhimurium*)--Result: negative; *in vitro* assay (fibroblasts)--Result: negative; *in vivo* mammalian bone-marrow cytogenetic test, chromosomal analysis (mouse, male and female)--Result: negative

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Teratogenicity: No data available
Reproductive/fertility toxicity: Damage to fetus not classifiable
Specific target organ toxicity, single exposure (Methanol, CAS No. 67-56-1)**:** Causes damage to organs
Specific target organ toxicity, repeated exposure: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Additional information (Methanol, CAS No. 67-56-1): RTECS: PC1400000 Effects due to ingestion may include headache, dizziness, drowsiness, metabolic acidosis, coma, seizures. Methanol may be fatal or cause blindness if swallowed. Stomach - Irregularities - Based on Human Evidence

Section 12: Ecological Information

12.1 Toxicity: No data available
12.2 Persistence and degradability: Readily biodegradable
12.3 Bioaccumulative potential: No data available
12.4 Mobility in soil: No data available
12.5 Results of PBT and vPvB assessment: No data available
12.6 Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13: Disposal Considerations

13.1 Waste treatment methods
Product: All waste must be handled and disposed according to local, state, and federal regulations. Avoid disposing large volumes in sewer.
Contaminated packaging: All waste must be handled and disposed according to local, state, and federal regulations.
Refer to sections 7 and 8 for safe handling guidance.

Section 14: Transport Information

DOT, Land Transport ADR/RID (cross-border), Maritime Transport IMDG, Air Transport ICAO-TI and IATA-DGR
UN Number: 3316
UN Proper shipping name: Chemical Kit, (contains Methanol)
Transport hazard class(es): 9
Packing group: III
Environmental hazard: See section 12
Bulk transport: Excepted/Limited quantity
Special considerations: See section 7 for handling

Section 15: Regulatory Information

EU Regulations, Hazard Symbol(s): Methanol: T (Toxic), F (Flammable)
Safety Phrases:
Methanol: S 7 / 16 / 36 / 37 / 45, Keep container tightly closed. Keep away from sources of ignition, no smoking. Wear suitable protective clothing and gloves. In case of accident or if you become ill, seek medical advice immediately (show product label).
SARA Title III, Section 313 Components: Methanol, CAS No. 67-56-1
SARA 311/312 Hazards: Methanol, CAS No. 67-56-1: Fire Hazard, Acute Health Hazard, Chronic Health Hazard
State Right-to-Know
Massachusetts: Methanol, CAS No. 67-56-1
Pennsylvania: Methanol, CAS No. 67-56-1
New Jersey: Methanol, CAS No. 67-56-1
California Prop. 65 Components: WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Methanol, CAS No. 67-56-1

Section 16: Other information

This information is based on our present knowledge. While Abraxis , Inc. believes that the data contained herein are factual and the opinions expressed represent a best effort to present accurate information, the data are not to be taken as a warranty or representation for which Abraxis , Inc. assumes legal responsibility. The information shall not be taken as being all-inclusive and is to be used only as a guide. The data are offered solely for the user's consideration, investigation, and verification. These suggestions should not be confused with either state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.

All materials and mixtures may present unknown hazards and should be used with caution. Since Abraxis , Inc. cannot control the methods, volumes, or conditions of use of this product, Abraxis , Inc. shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. An individual technically qualified to handle potentially hazardous chemicals must supervise the use of this material. This product is sold for research use only. It is not for any human or animal therapeutic or clinical diagnostic use.

Date this SDS was prepared: 5/24/2016
Version: 3
Changes from previous version: Abraxis, LLC changed to Abraxis, Inc.