

SAFETY DATA SHEET



CE OQ - PV Test Kit, Part Number 5063-6515

Section 1. Identification

1.1 Product identifier

Product name : CE OQ - PV Test Kit, Part Number 5063-6515

Part no. (chemical kit) : 5063-6515

Part no. : 4'-(Hydroxy) Acetophenone Solution 0.1mM Not available.
 4'-(Hydroxy) Acetophenone Solution 0.5mM Not available.
 4'-(Hydroxy) Acetophenone Solution 1.0mM Not available.
 4'-(Hydroxy) Acetophenone Solution 5.0mM Not available.
 20 mM Borate Buffer - pH9.3 8500-6782
 Sodium Hydroxide Solution 1.0N for HPCE 5062-8576

Validation date : 10/25/2023

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Reagents and Standards for Analytical Chemistry Laboratory Use

4'-(Hydroxy) Acetophenone Solution 0.1mM	1 x 3 ml vial
4'-(Hydroxy) Acetophenone Solution 0.5mM	1 x 3 ml vial
4'-(Hydroxy) Acetophenone Solution 1.0mM	1 x 3 ml vial
4'-(Hydroxy) Acetophenone Solution 5.0mM	1 x 3 ml vial
20 mM Borate Buffer - pH9.3	1 x 100 ml Bottle
Sodium Hydroxide Solution 1.0N for HPCE	1 x 250 ml Bottle

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
 5301 Stevens Creek Blvd
 Santa Clara, CA 95051, USA
 800-227-9770

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 : 4'-(Hydroxy) Acetophenone Solution 0.1mM This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 4'-(Hydroxy) Acetophenone Solution 0.5mM This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 4'-(Hydroxy) Acetophenone Solution 1.0mM This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 4'-(Hydroxy) Acetophenone Solution 5.0mM This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 20 mM Borate Buffer - pH9.3 This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 Sodium Hydroxide Solution 1.0N for HPCE This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Section 2. Hazards identification

4'-(Hydroxy) Acetophenone

Solution 0.1mM

H360 TOXIC TO REPRODUCTION - Category 1B

4'-(Hydroxy) Acetophenone

Solution 0.5mM

H360 TOXIC TO REPRODUCTION - Category 1B

4'-(Hydroxy) Acetophenone

Solution 1.0mM

H360 TOXIC TO REPRODUCTION - Category 1B

4'-(Hydroxy) Acetophenone

Solution 5.0mM

H360 TOXIC TO REPRODUCTION - Category 1B

20 mM Borate Buffer - pH9.3

H360 TOXIC TO REPRODUCTION - Category 1B

Sodium Hydroxide Solution

1.0N for HPCE

H290 CORROSIVE TO METALS - Category 1
 H315 SKIN IRRITATION - Category 2
 H318 SERIOUS EYE DAMAGE - Category 1
 H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

2.2 GHS label elements

Hazard pictograms

: 4'-(Hydroxy) Acetophenone
 Solution 0.1mM



4'-(Hydroxy) Acetophenone
 Solution 0.5mM



4'-(Hydroxy) Acetophenone
 Solution 1.0mM



4'-(Hydroxy) Acetophenone
 Solution 5.0mM



20 mM Borate Buffer - pH9.3



Sodium Hydroxide Solution 1.0N
 for HPCE



Signal word

:

Section 2. Hazards identification

	4'-(Hydroxy) Acetophenone Solution 0.1mM	Danger
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Danger
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Danger
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Danger
	20 mM Borate Buffer - pH9.3	Danger
	Sodium Hydroxide Solution 1.0N for HPCE	Danger
Hazard statements	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	H360 - May damage fertility or the unborn child.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	H360 - May damage fertility or the unborn child.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	H360 - May damage fertility or the unborn child.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	H360 - May damage fertility or the unborn child.
	20 mM Borate Buffer - pH9.3	H360 - May damage fertility or the unborn child.
	Sodium Hydroxide Solution 1.0N for HPCE	H290 - May be corrosive to metals. H315 - Causes skin irritation. H318 - Causes serious eye damage. H335 - May cause respiratory irritation.
Precautionary statements		
Prevention	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection.
	20 mM Borate Buffer - pH9.3	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection.
	Sodium Hydroxide Solution 1.0N for HPCE	P280 - Wear protective gloves. Wear eye or face protection. P234 - Keep only in original packaging. P261 - Avoid breathing vapor. P264 - Wash thoroughly after handling.
Response	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
	20 mM Borate Buffer - pH9.3	P308 + P313 - IF exposed or concerned: Get

Section 2. Hazards identification

medical advice or attention.
P390 - Absorb spillage to prevent material damage.

P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Not applicable.
P403 + P233 - Store in a well-ventilated place.
Keep container tightly closed.

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

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None known.

None known.

None known.

None known.

None known.

None known.

Storage

: 4'-(Hydroxy) Acetophenone Solution 0.1mM
4'-(Hydroxy) Acetophenone Solution 0.5mM
4'-(Hydroxy) Acetophenone Solution 1.0mM
4'-(Hydroxy) Acetophenone Solution 5.0mM
20 mM Borate Buffer - pH9.3
Sodium Hydroxide Solution 1.0N for HPCE

Disposal

: 4'-(Hydroxy) Acetophenone Solution 0.1mM

4'-(Hydroxy) Acetophenone Solution 0.5mM

4'-(Hydroxy) Acetophenone Solution 1.0mM

4'-(Hydroxy) Acetophenone Solution 5.0mM

20 mM Borate Buffer - pH9.3

Sodium Hydroxide Solution 1.0N for HPCE

Supplemental label elements

: 4'-(Hydroxy) Acetophenone Solution 0.1mM
4'-(Hydroxy) Acetophenone Solution 0.5mM
4'-(Hydroxy) Acetophenone Solution 1.0mM
4'-(Hydroxy) Acetophenone Solution 5.0mM
20 mM Borate Buffer - pH9.3
Sodium Hydroxide Solution 1.0N for HPCE

2.3 Other hazards

Section 2. Hazards identification

Hazards not otherwise classified	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	None known.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	None known.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	None known.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	None known.
	20 mM Borate Buffer - pH9.3	None known.
	Sodium Hydroxide Solution 1.0N for HPCE	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Mixture
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Mixture
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Mixture
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Mixture
	20 mM Borate Buffer - pH9.3	Mixture
	Sodium Hydroxide Solution 1.0N for HPCE	Mixture

Ingredient name	%	CAS number
4'-(Hydroxy) Acetophenone Solution 0.1mM		
Disodium tetraborate, anhydrous	<1	1330-43-4
4'-(Hydroxy) Acetophenone Solution 0.5mM		
Disodium tetraborate, anhydrous	<1	1330-43-4
4'-(Hydroxy) Acetophenone Solution 1.0mM		
Disodium tetraborate, anhydrous	<1	1330-43-4
4'-(Hydroxy) Acetophenone Solution 5.0mM		
Disodium tetraborate, anhydrous	<1	1330-43-4
20 mM Borate Buffer - pH9.3		
Disodium tetraborate, anhydrous	<1	1330-43-4
Sodium Hydroxide Solution 1.0N for HPCE		
Sodium hydroxide	≤5	1310-73-2

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

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified 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

: 4'-(Hydroxy) Acetophenone
Solution 0.1mM

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

4'-(Hydroxy) Acetophenone
Solution 0.5mM

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

4'-(Hydroxy) Acetophenone
Solution 1.0mM

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

20 mM Borate Buffer - pH9.3

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Sodium Hydroxide Solution 1.0N
for HPCE

Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation

: 4'-(Hydroxy) Acetophenone
Solution 0.1mM

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4'-(Hydroxy) Acetophenone
Solution 0.5mM

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4'-(Hydroxy) Acetophenone
Solution 1.0mM

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or

Section 4. First aid measures

oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

20 mM Borate Buffer - pH9.3

Sodium Hydroxide Solution 1.0N
for HPCE

Skin contact

: 4'-(Hydroxy) Acetophenone
Solution 0.1mM

4'-(Hydroxy) Acetophenone
Solution 0.5mM

4'-(Hydroxy) Acetophenone
Solution 1.0mM

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash

Section 4. First aid measures

contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

20 mM Borate Buffer - pH9.3

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Sodium Hydroxide Solution 1.0N
for HPCE

Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: 4'-(Hydroxy) Acetophenone
Solution 0.1mM

Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.

Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4'-(Hydroxy) Acetophenone
Solution 0.5mM

Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.

Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4'-(Hydroxy) Acetophenone
Solution 1.0mM

Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical

Section 4. First aid measures

4'-(Hydroxy) Acetophenone
Solution 5.0mM

20 mM Borate Buffer - pH9.3

Sodium Hydroxide Solution 1.0N
for HPCE

personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact

4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.

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	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards. Causes serious eye damage.
Inhalation	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards. May cause respiratory irritation.
Skin contact	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards. Causes skin irritation.
Ingestion	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards. No known significant effects or critical hazards.
<u>Over-exposure signs/symptoms</u>		
Eye contact	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No specific data.
	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	No specific data. Adverse symptoms may include the following: pain watering redness
Inhalation	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Adverse symptoms may include the following:

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	4'-(Hydroxy) Acetophenone Solution 1.0mM	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
	4'-(Hydroxy) Acetophenone Solution 5.0mM	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
	20 mM Borate Buffer - pH9.3	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
	Sodium Hydroxide Solution 1.0N for HPCE	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
Skin contact	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	respiratory tract irritation coughing Adverse symptoms may include the following:
	4'-(Hydroxy) Acetophenone Solution 0.5mM	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
	4'-(Hydroxy) Acetophenone Solution 1.0mM	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
	4'-(Hydroxy) Acetophenone Solution 5.0mM	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
	20 mM Borate Buffer - pH9.3	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
	Sodium Hydroxide Solution 1.0N for HPCE	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
Ingestion	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	pain or irritation redness blistering may occur Adverse symptoms may include the following:
	4'-(Hydroxy) Acetophenone Solution 0.5mM	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following:
		reduced fetal weight increase in fetal deaths

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4'-(Hydroxy) Acetophenone Solution 1.0mM	skeletal malformations Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
4'-(Hydroxy) Acetophenone Solution 5.0mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
20 mM Borate Buffer - pH9.3	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Sodium Hydroxide Solution 1.0N for HPCE	Adverse symptoms may include the following: stomach pains

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

Notes to physician	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	20 mM Borate Buffer - pH9.3	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Sodium Hydroxide Solution 1.0N for HPCE	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No specific treatment.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No specific treatment.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No specific treatment.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No specific treatment.
	20 mM Borate Buffer - pH9.3	No specific treatment.
	Sodium Hydroxide Solution 1.0N for HPCE	No specific treatment.
Protection of first-aiders	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an

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4'-(Hydroxy) Acetophenone
Solution 1.0mM

appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

20 mM Borate Buffer - pH9.3

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Sodium Hydroxide Solution 1.0N
for HPCE

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

: 4'-(Hydroxy) Acetophenone
Solution 0.1mM

Use an extinguishing agent suitable for the surrounding fire.

4'-(Hydroxy) Acetophenone
Solution 0.5mM

Use an extinguishing agent suitable for the surrounding fire.

4'-(Hydroxy) Acetophenone
Solution 1.0mM

Use an extinguishing agent suitable for the surrounding fire.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

Use an extinguishing agent suitable for the surrounding fire.

20 mM Borate Buffer - pH9.3

Use an extinguishing agent suitable for the surrounding fire.

Sodium Hydroxide Solution 1.0N
for HPCE

Use an extinguishing agent suitable for the surrounding fire.

Section 5. Fire-fighting measures

Unsuitable extinguishing media	4'-(Hydroxy) Acetophenone Solution 0.1mM	None known.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	None known.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	None known.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	None known.
	20 mM Borate Buffer - pH9.3	None known.
	Sodium Hydroxide Solution 1.0N for HPCE	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	4'-(Hydroxy) Acetophenone Solution 0.1mM	In a fire or if heated, a pressure increase will occur and the container may burst.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	In a fire or if heated, a pressure increase will occur and the container may burst.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	In a fire or if heated, a pressure increase will occur and the container may burst.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	In a fire or if heated, a pressure increase will occur and the container may burst.
	20 mM Borate Buffer - pH9.3	In a fire or if heated, a pressure increase will occur and the container may burst.
	Sodium Hydroxide Solution 1.0N for HPCE	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	4'-(Hydroxy) Acetophenone Solution 0.1mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No specific data.
	20 mM Borate Buffer - pH9.3	No specific data.
	Sodium Hydroxide Solution 1.0N for HPCE	Decomposition products may include the following materials: metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters	4'-(Hydroxy) Acetophenone Solution 0.1mM	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.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	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.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	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.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	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.
	20 mM Borate Buffer - pH9.3	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

Section 5. Fire-fighting measures

	Sodium Hydroxide Solution 1.0N for HPCE	without suitable training. 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.
Special protective equipment for fire-fighters	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	20 mM Borate Buffer - pH9.3	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Sodium Hydroxide Solution 1.0N for HPCE	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	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

	4'-(Hydroxy) Acetophenone Solution 5.0mM	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	20 mM Borate Buffer - pH9.3	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	Sodium Hydroxide Solution 1.0N for HPCE	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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders :	4'-(Hydroxy) Acetophenone Solution 0.1mM	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	4'-(Hydroxy) Acetophenone Solution 0.5mM	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	4'-(Hydroxy) Acetophenone Solution 1.0mM	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	4'-(Hydroxy) Acetophenone Solution 5.0mM	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	20 mM Borate Buffer - pH9.3	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	Sodium Hydroxide Solution 1.0N for HPCE	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	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).
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has

Section 6. Accidental release measures

4'-(Hydroxy) Acetophenone
Solution 1.0mM

caused environmental pollution (sewers, waterways, soil or air).

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).

4'-(Hydroxy) Acetophenone
Solution 5.0mM

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).

20 mM Borate Buffer - pH9.3

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).

Sodium Hydroxide Solution 1.0N
for HPCE

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

: 4'-(Hydroxy) Acetophenone
Solution 0.1mM

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.

4'-(Hydroxy) Acetophenone
Solution 0.5mM

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.

4'-(Hydroxy) Acetophenone
Solution 1.0mM

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.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

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.

20 mM Borate Buffer - pH9.3

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.

Sodium Hydroxide Solution 1.0N
for HPCE

Stop leak if without risk. Move containers from spill area. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Section 6. Accidental release measures

Absorb spillage to prevent material damage.
Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures

: 4'-(Hydroxy) Acetophenone
Solution 0.1mM

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

4'-(Hydroxy) Acetophenone
Solution 0.5mM

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

4'-(Hydroxy) Acetophenone
Solution 1.0mM

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Section 7. Handling and storage

Empty containers retain product residue and can be hazardous. Do not reuse container.

20 mM Borate Buffer - pH9.3

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Empty containers retain product residue and can be hazardous. Do not reuse container.

Sodium Hydroxide Solution 1.0N for HPCE

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.

Advice on general occupational hygiene

: 4'-(Hydroxy) Acetophenone Solution 0.1mM

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.

4'-(Hydroxy) Acetophenone Solution 0.5mM

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.

4'-(Hydroxy) Acetophenone Solution 1.0mM

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.

4'-(Hydroxy) Acetophenone Solution 5.0mM

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.

20 mM Borate Buffer - pH9.3

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

Section 7. Handling and storage

Sodium Hydroxide Solution 1.0N
for HPCE

contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. 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

: 4-(Hydroxy) Acetophenone
Solution 0.1mM

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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

4'-(Hydroxy) Acetophenone
Solution 0.5mM

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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

4'-(Hydroxy) Acetophenone
Solution 1.0mM

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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

4'-(Hydroxy) Acetophenone
Solution 5.0mM

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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

20 mM Borate Buffer - pH9.3

Store in accordance with local regulations. Store in

Section 7. Handling and storage

Sodium Hydroxide Solution 1.0N
for HPCE

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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

Store between the following temperatures: 15 to 25°C (59 to 77°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. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Separate from acids. Keep away from metals. 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. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

4'-(Hydroxy) Acetophenone Solution 0.1mM	Industrial applications, Professional applications.
4'-(Hydroxy) Acetophenone Solution 0.5mM	Industrial applications, Professional applications.
4'-(Hydroxy) Acetophenone Solution 1.0mM	Industrial applications, Professional applications.
4'-(Hydroxy) Acetophenone Solution 5.0mM	Industrial applications, Professional applications.
20 mM Borate Buffer - pH9.3	Industrial applications, Professional applications.
Sodium Hydroxide Solution 1.0N for HPCE	Industrial applications, Professional applications.

Industrial sector specific solutions

4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
20 mM Borate Buffer - pH9.3	Not available.
Sodium Hydroxide Solution 1.0N for HPCE	Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
<p>4'-(Hydroxy) Acetophenone Solution 0.1mM Disodium tetraborate, anhydrous</p>	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 10 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 1 mg/m³ 10 hours. ACGIH TLV (United States, 1/2022). [Borate compounds, Inorganic] TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction CAL OSHA PEL (United States, 5/2018). [borates, tetra, sodium salts, anhydrous] TWA: 5 mg/m³ 8 hours.</p>
<p>4'-(Hydroxy) Acetophenone Solution 0.5mM Disodium tetraborate, anhydrous</p>	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 10 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 1 mg/m³ 10 hours. ACGIH TLV (United States, 1/2022). [Borate compounds, Inorganic] TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction CAL OSHA PEL (United States, 5/2018). [borates, tetra, sodium salts, anhydrous] TWA: 5 mg/m³ 8 hours.</p>
<p>4'-(Hydroxy) Acetophenone Solution 1.0mM Disodium tetraborate, anhydrous</p>	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 10 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 1 mg/m³ 10 hours. ACGIH TLV (United States, 1/2022). [Borate compounds, Inorganic] TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction CAL OSHA PEL (United States, 5/2018). [borates, tetra, sodium salts, anhydrous] TWA: 5 mg/m³ 8 hours.</p>
<p>4'-(Hydroxy) Acetophenone Solution 5.0mM Disodium tetraborate, anhydrous</p>	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 10 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 1 mg/m³ 10 hours. ACGIH TLV (United States, 1/2022). [Borate compounds, Inorganic] TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction</p>

Section 8. Exposure controls/personal protection

<p>20 mM Borate Buffer - pH9.3 Disodium tetraborate, anhydrous</p>	<p>STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction CAL OSHA PEL (United States, 5/2018). [borates, tetra, sodium salts, anhydrous] TWA: 5 mg/m³ 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 10 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 1 mg/m³ 10 hours. ACGIH TLV (United States, 1/2022). [Borate compounds, Inorganic] TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction CAL OSHA PEL (United States, 5/2018). [borates, tetra, sodium salts, anhydrous] TWA: 5 mg/m³ 8 hours.</p>
<p>Sodium Hydroxide Solution 1.0N for HPCE Sodium hydroxide</p>	<p>ACGIH TLV (United States, 1/2022). C: 2 mg/m³ OSHA PEL 1989 (United States, 3/1989). CEIL: 2 mg/m³ NIOSH REL (United States, 10/2020). CEIL: 2 mg/m³ OSHA PEL (United States, 5/2018). TWA: 2 mg/m³ 8 hours. CAL OSHA PEL (United States, 5/2018). C: 2 mg/m³</p>

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

Appropriate engineering controls

: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

: 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: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- 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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Liquid. [Clear.]
	: 4'-(Hydroxy) Acetophenone Solution 0.5mM	Liquid. [Clear.]
	: 4'-(Hydroxy) Acetophenone Solution 1.0mM	Liquid. [Clear.]
	: 4'-(Hydroxy) Acetophenone Solution 5.0mM	Liquid. [Clear.]
	: 20 mM Borate Buffer - pH9.3	Liquid.
	: Sodium Hydroxide Solution 1.0N for HPCE	Liquid.
Color	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Colorless.
	: 4'-(Hydroxy) Acetophenone Solution 0.5mM	Colorless.
	: 4'-(Hydroxy) Acetophenone Solution 1.0mM	Colorless.
	: 4'-(Hydroxy) Acetophenone Solution 5.0mM	Colorless.
	: 20 mM Borate Buffer - pH9.3	Yellow. [Light]
	: Sodium Hydroxide Solution 1.0N for HPCE	Colorless.
Odor	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Jasmine-like.
	: 4'-(Hydroxy) Acetophenone Solution 0.5mM	Jasmine-like.
	: 4'-(Hydroxy) Acetophenone Solution 1.0mM	Jasmine-like.
	: 4'-(Hydroxy) Acetophenone Solution 5.0mM	Jasmine-like.
	: 20 mM Borate Buffer - pH9.3	Not available.
	: Sodium Hydroxide Solution 1.0N for HPCE	Not available.

Section 9. Physical and chemical properties and safety characteristics

Odor threshold	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
	20 mM Borate Buffer - pH9.3	Not available.
	Sodium Hydroxide Solution 1.0N for HPCE	Not available.
pH	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
	20 mM Borate Buffer - pH9.3	9.3
	Sodium Hydroxide Solution 1.0N for HPCE	>11.5
Melting point/freezing point	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	0°C (32°F)
	4'-(Hydroxy) Acetophenone Solution 0.5mM	0°C (32°F)
	4'-(Hydroxy) Acetophenone Solution 1.0mM	0°C (32°F)
	4'-(Hydroxy) Acetophenone Solution 5.0mM	0°C (32°F)
	20 mM Borate Buffer - pH9.3	0°C (32°F)
	Sodium Hydroxide Solution 1.0N for HPCE	0°C (32°F)
Boiling point, initial boiling point, and boiling range	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	100°C (212°F)
	4'-(Hydroxy) Acetophenone Solution 0.5mM	100°C (212°F)
	4'-(Hydroxy) Acetophenone Solution 1.0mM	100°C (212°F)
	4'-(Hydroxy) Acetophenone Solution 5.0mM	100°C (212°F)
	20 mM Borate Buffer - pH9.3	100°C (212°F)
	Sodium Hydroxide Solution 1.0N for HPCE	100°C (212°F)
Flash point	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
	20 mM Borate Buffer - pH9.3	Not available.
	Sodium Hydroxide Solution 1.0N for HPCE	Not available.

Section 9. Physical and chemical properties and safety characteristics

Evaporation rate	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	<1 (butyl acetate = 1) Not available.
Flammability	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not applicable.
	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	Not applicable.
		Not applicable.
Lower and upper explosion limit/flammability limit	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
	20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE	Not available.
		Not available.
Vapor pressure	: Sodium Hydroxide Solution 1.0N for HPCE	<2.4 kPa (<18 mm Hg)

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
4'-(Hydroxy) Acetophenone Solution 0.1mM						
water	17.5	2.3	-	92.258	12.3	-
4'-(Hydroxy) Acetophenone Solution 0.5mM						
water	17.5	2.3	-	92.258	12.3	-
4'-(Hydroxy) Acetophenone Solution 1.0mM						
water	17.5	2.3	-	92.258	12.3	-

Section 9. Physical and chemical properties and safety characteristics

4'-(Hydroxy) Acetophenone Solution 5.0mM							
water	17.5	2.3	-	92.258	12.3	-	
20 mM Borate Buffer - pH9.3							
water	17.5	2.3	-	92.258	12.3	-	

Relative vapor density :

- 4'-(Hydroxy) Acetophenone Solution 0.1mM Not available.
- 4'-(Hydroxy) Acetophenone Solution 0.5mM Not available.
- 4'-(Hydroxy) Acetophenone Solution 1.0mM Not available.
- 4'-(Hydroxy) Acetophenone Solution 5.0mM Not available.
- 20 mM Borate Buffer - pH9.3 Not available.
- Sodium Hydroxide Solution 1.0N for HPCE >1 [Air = 1]

Relative density :

- 4'-(Hydroxy) Acetophenone Solution 0.1mM Not available.
- 4'-(Hydroxy) Acetophenone Solution 0.5mM Not available.
- 4'-(Hydroxy) Acetophenone Solution 1.0mM Not available.
- 4'-(Hydroxy) Acetophenone Solution 5.0mM Not available.
- 20 mM Borate Buffer - pH9.3 1
- Sodium Hydroxide Solution 1.0N for HPCE Not available.

Solubility(ies) :

Media	Result
4'-(Hydroxy) Acetophenone Solution 0.1mM	
water	Soluble
acetone	Soluble
diethyl ether	Insoluble
4'-(Hydroxy) Acetophenone Solution 0.5mM	
water	Soluble
acetone	Soluble
diethyl ether	Insoluble
4'-(Hydroxy) Acetophenone Solution 1.0mM	
water	Soluble
acetone	Soluble
diethyl ether	Insoluble
4'-(Hydroxy) Acetophenone Solution 5.0mM	
water	Soluble
acetone	Soluble
diethyl ether	Insoluble
20 mM Borate Buffer - pH9.3	
water	Soluble
Sodium Hydroxide Solution 1.0N for HPCE	

Section 9. Physical and chemical properties and safety characteristics

	water	Soluble
Partition coefficient: n-octanol/water	4'-(Hydroxy) Acetophenone Solution 0.1mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not applicable.
	20 mM Borate Buffer - pH9.3	Not applicable.
	Sodium Hydroxide Solution 1.0N for HPCE	Not applicable.
Auto-ignition temperature	Not available.	
Decomposition temperature	4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
	20 mM Borate Buffer - pH9.3	Not available.
	Sodium Hydroxide Solution 1.0N for HPCE	Not available.
Viscosity	4'-(Hydroxy) Acetophenone Solution 0.1mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not available.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not available.
	20 mM Borate Buffer - pH9.3	Not available.
	Sodium Hydroxide Solution 1.0N for HPCE	Not available.
Particle characteristics		
Median particle size	4'-(Hydroxy) Acetophenone Solution 0.1mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Not applicable.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Not applicable.
	20 mM Borate Buffer - pH9.3	Not applicable.
	Sodium Hydroxide Solution 1.0N for HPCE	Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity	4'-(Hydroxy) Acetophenone Solution 0.1mM	No specific test data related to reactivity available for this product or its ingredients.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No specific test data related to reactivity available for this product or its ingredients.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No specific test data related to reactivity available for this product or its ingredients.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No specific test data related to reactivity available for this product or its ingredients.
	20 mM Borate Buffer - pH9.3	No specific test data related to reactivity available for this product or its ingredients.
		No specific test data related to reactivity available for this product or its ingredients.

Section 10. Stability and reactivity

	Sodium Hydroxide Solution 1.0N for HPCE	for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	<ul style="list-style-type: none"> : 4'-(Hydroxy) Acetophenone Solution 0.1mM 4'-(Hydroxy) Acetophenone Solution 0.5mM 4'-(Hydroxy) Acetophenone Solution 1.0mM 4'-(Hydroxy) Acetophenone Solution 5.0mM 20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE 	<p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p>
10.3 Possibility of hazardous reactions	<ul style="list-style-type: none"> : 4'-(Hydroxy) Acetophenone Solution 0.1mM 4'-(Hydroxy) Acetophenone Solution 0.5mM 4'-(Hydroxy) Acetophenone Solution 1.0mM 4'-(Hydroxy) Acetophenone Solution 5.0mM 20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE 	<p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p>
10.4 Conditions to avoid	<ul style="list-style-type: none"> : 4'-(Hydroxy) Acetophenone Solution 0.1mM 4'-(Hydroxy) Acetophenone Solution 0.5mM 4'-(Hydroxy) Acetophenone Solution 1.0mM 4'-(Hydroxy) Acetophenone Solution 5.0mM 20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE 	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p>
10.5 Incompatible materials	<ul style="list-style-type: none"> : 4'-(Hydroxy) Acetophenone Solution 0.1mM 4'-(Hydroxy) Acetophenone Solution 0.5mM 4'-(Hydroxy) Acetophenone Solution 1.0mM 4'-(Hydroxy) Acetophenone Solution 5.0mM 20 mM Borate Buffer - pH9.3 Sodium Hydroxide Solution 1.0N for HPCE 	<p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>Reactive or incompatible with the following materials: acids metals</p>

Section 10. Stability and reactivity

10.6 Hazardous decomposition products	4'-(Hydroxy) Acetophenone Solution 0.1mM	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	20 mM Borate Buffer - pH9.3	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Sodium Hydroxide Solution 1.0N for HPCE	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

Product/ingredient name	Result	Species	Score	Exposure	Observation
Sodium Hydroxide Solution 1.0N for HPCE Sodium hydroxide	Eyes - Severe irritant	Rabbit	-	1 %	-
	Eyes - Severe irritant	Rabbit	-	0.5 minutes 1 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 50 ug	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 mg	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Sodium Hydroxide Solution 1.0N for HPCE Sodium Hydroxide Solution 1.0N for HPCE	Category 3	-	Respiratory tract irritation
Sodium hydroxide	Category 3	-	Respiratory tract irritation

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

4'-(Hydroxy) Acetophenone Solution 0.1mM	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
4'-(Hydroxy) Acetophenone Solution 0.5mM	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
4'-(Hydroxy) Acetophenone Solution 1.0mM	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
4'-(Hydroxy) Acetophenone Solution 5.0mM	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
20 mM Borate Buffer - pH9.3	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Sodium Hydroxide Solution 1.0N for HPCE	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact

4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
20 mM Borate Buffer - pH9.3	No known significant effects or critical hazards.
Sodium Hydroxide Solution 1.0N for HPCE	Causes serious eye damage.

Inhalation

4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
20 mM Borate Buffer - pH9.3	No known significant effects or critical hazards.
Sodium Hydroxide Solution 1.0N for HPCE	May cause respiratory irritation.

Skin contact

4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
20 mM Borate Buffer - pH9.3	No known significant effects or critical hazards.
Sodium Hydroxide Solution 1.0N for HPCE	Causes skin irritation.

Section 11. Toxicological information

Ingestion	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
	20 mM Borate Buffer - pH9.3	No known significant effects or critical hazards.
	Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 0.5mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 1.0mM	No specific data.
	4'-(Hydroxy) Acetophenone Solution 5.0mM	No specific data.
	20 mM Borate Buffer - pH9.3	No specific data.
	Sodium Hydroxide Solution 1.0N for HPCE	Adverse symptoms may include the following: pain watering redness
Inhalation	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	20 mM Borate Buffer - pH9.3	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Sodium Hydroxide Solution 1.0N for HPCE	Adverse symptoms may include the following: respiratory tract irritation coughing

Section 11. Toxicological information

Skin contact	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	20 mM Borate Buffer - pH9.3	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Sodium Hydroxide Solution 1.0N for HPCE	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 0.5mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 1.0mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	4'-(Hydroxy) Acetophenone Solution 5.0mM	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	20 mM Borate Buffer - pH9.3	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Sodium Hydroxide Solution 1.0N for HPCE	Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
	: 20 mM Borate Buffer - pH9.3	No known significant effects or critical hazards.
	: Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards.
Carcinogenicity	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
	: 20 mM Borate Buffer - pH9.3	No known significant effects or critical hazards.
	: Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards.
Mutagenicity	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 0.5mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 1.0mM	No known significant effects or critical hazards.
	: 4'-(Hydroxy) Acetophenone Solution 5.0mM	No known significant effects or critical hazards.
	: 20 mM Borate Buffer - pH9.3	No known significant effects or critical hazards.
	: Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards.
Reproductive toxicity	: 4'-(Hydroxy) Acetophenone Solution 0.1mM	May damage fertility or the unborn child.
	: 4'-(Hydroxy) Acetophenone Solution 0.5mM	May damage fertility or the unborn child.
	: 4'-(Hydroxy) Acetophenone Solution 1.0mM	May damage fertility or the unborn child.
	: 4'-(Hydroxy) Acetophenone Solution 5.0mM	May damage fertility or the unborn child.
	: 20 mM Borate Buffer - pH9.3	May damage fertility or the unborn child.
	: Sodium Hydroxide Solution 1.0N for HPCE	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

NA

Section 11. Toxicological information

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
4'-(Hydroxy) Acetophenone Solution 0.1mM Disodium tetraborate, anhydrous	Acute LC50 291.4 mg/l Marine water	Crustaceans - <i>Americamysis bahia</i>	48 hours
	Acute LC50 141000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 1900 mg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
4'-(Hydroxy) Acetophenone Solution 0.5mM Disodium tetraborate, anhydrous	Acute LC50 291.4 mg/l Marine water	Crustaceans - <i>Americamysis bahia</i>	48 hours
	Acute LC50 141000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 1900 mg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
4'-(Hydroxy) Acetophenone Solution 1.0mM Disodium tetraborate, anhydrous	Acute LC50 291.4 mg/l Marine water	Crustaceans - <i>Americamysis bahia</i>	48 hours
	Acute LC50 141000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 1900 mg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
4'-(Hydroxy) Acetophenone Solution 5.0mM Disodium tetraborate, anhydrous	Acute LC50 291.4 mg/l Marine water	Crustaceans - <i>Americamysis bahia</i>	48 hours
	Acute LC50 141000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 1900 mg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
20 mM Borate Buffer - pH9.3 Disodium tetraborate, anhydrous	Acute LC50 291.4 mg/l Marine water	Crustaceans - <i>Americamysis bahia</i>	48 hours
	Acute LC50 141000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 1900 mg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
Sodium Hydroxide Solution 1.0N for HPCE Sodium hydroxide	Acute LC50 125 ppm Fresh water	Fish - <i>Gambusia affinis</i> - Adult	96 hours

12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Sodium Hydroxide Solution 1.0N for HPCE Sodium hydroxide	-	-	Readily

Section 12. Ecological information

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
4'-(Hydroxy) Acetophenone Solution 0.1mM Disodium tetraborate, anhydrous	-1.53	-	Low
4'-(Hydroxy) Acetophenone Solution 0.5mM Disodium tetraborate, anhydrous	-1.53	-	Low
4'-(Hydroxy) Acetophenone Solution 1.0mM Disodium tetraborate, anhydrous	-1.53	-	Low
4'-(Hydroxy) Acetophenone Solution 5.0mM Disodium tetraborate, anhydrous	-1.53	-	Low
20 mM Borate Buffer - pH9.3 Disodium tetraborate, anhydrous	-1.53	-	Low

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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. 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

Section 13. Disposal considerations

for additional handling information and protection of employees.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1824	UN1824	UN1824	UN1824	UN1824
UN proper shipping name	Sodium hydroxide solution	SODIUM HYDROXIDE SOLUTION	HIDROXIDO DE SODIO EN SOLUCION	SODIUM HYDROXIDE SOLUTION	Sodium hydroxide solution
Transport hazard class(es)	8 	8 	8 	8 	8 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

Additional information

DOT Classification

: **Limited quantity** Yes.
Packaging instruction Exceptions: 154. Non-bulk: 202. Bulk: 242.
Quantity limitation Passenger aircraft/rail: 1 L. Cargo aircraft: 30 L.
Special provisions B2, IB2, N34, T7, TP2

TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8).
Explosive Limit and Limited Quantity Index 1
Passenger Carrying Road or Rail Index 1

IMDG

: **Emergency schedules** F-A, S-B

IATA

: **Quantity limitation** Passenger and Cargo Aircraft: 1 L. Packaging instructions: 851. Cargo Aircraft Only: 30 L. Packaging instructions: 855. Limited Quantities - Passenger Aircraft: 0.5 L. Packaging instructions: Y840.
Special provisions A3, A803

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

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

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 311: Sodium hydroxide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Section 15. Regulatory information

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 :

4-(Hydroxy) Acetophenone Solution 0.1mM	TOXIC TO REPRODUCTION - Category 1B
4'-(Hydroxy) Acetophenone Solution 0.5mM	TOXIC TO REPRODUCTION - Category 1B
4'-(Hydroxy) Acetophenone Solution 1.0mM	TOXIC TO REPRODUCTION - Category 1B
4'-(Hydroxy) Acetophenone Solution 5.0mM	TOXIC TO REPRODUCTION - Category 1B
20 mM Borate Buffer - pH9.3	TOXIC TO REPRODUCTION - Category 1B
Sodium Hydroxide Solution 1.0N for HPCE	CORROSIVE TO METALS - Category 1 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Composition/information on ingredients

Name	%	Classification
4-(Hydroxy) Acetophenone Solution 0.1mM Disodium tetraborate, anhydrous	<1	EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION - Category 1B
4'-(Hydroxy) Acetophenone Solution 0.5mM Disodium tetraborate, anhydrous	<1	EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION - Category 1B
4'-(Hydroxy) Acetophenone Solution 1.0mM Disodium tetraborate, anhydrous	<1	EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION - Category 1B
4'-(Hydroxy) Acetophenone Solution 5.0mM Disodium tetraborate, anhydrous	<1	EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION - Category 1B
20 mM Borate Buffer - pH9.3 Disodium tetraborate, anhydrous	<1	EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION - Category 1B
Sodium Hydroxide Solution 1.0N for HPCE Sodium hydroxide	≤5	CORROSIVE TO METALS - Category 1 SKIN CORROSION - Category 1A SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Corrosive to digestive tract [severe]

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

Section 15. Regulatory information

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : All components are listed or exempted.

Canada : At least one component is not listed in DSL but all such components are listed in NDSL.

China : All components are listed or exempted.

Japan : **Japan inventory (CSCL)**: All components are listed or exempted.
Japan inventory (ISHL): 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.

Thailand : Not determined.

Turkey : Not determined.

United States : All components are active or exempted.

Viet Nam : All components are listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
4'-(Hydroxy) Acetophenone Solution 0.1mM TOXIC TO REPRODUCTION - Category 1B	Calculation method
4'-(Hydroxy) Acetophenone Solution 0.5mM TOXIC TO REPRODUCTION - Category 1B	Calculation method
4'-(Hydroxy) Acetophenone Solution 1.0mM TOXIC TO REPRODUCTION - Category 1B	Calculation method
4'-(Hydroxy) Acetophenone Solution 5.0mM TOXIC TO REPRODUCTION - Category 1B	Calculation method
20 mM Borate Buffer - pH9.3 TOXIC TO REPRODUCTION - Category 1B	Calculation method

Section 16. Other information

Sodium Hydroxide Solution 1.0N for HPCE

CORROSIVE TO METALS - Category 1

SKIN IRRITATION - Category 2

SERIOUS EYE DAMAGE - Category 1

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Expert judgment

Expert judgment

On basis of test data

Expert judgment

History

Date of issue/Date of revision : 10/25/2023

Date of previous issue : 09/01/2022

Version : 8

Key to abbreviations

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

N/A = Not available

UN = United Nations

📌 Indicates information that has changed from previously issued version.

Notice to reader

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