

## SCREENING-LEVEL HAZARD CHARACTERIZATION 1-(4-Chlorophenyl)-4,4-dimethyl-3-pentanone (CASRN 66346-01-8)

The High Production Volume (HPV) Challenge Program<sup>1</sup> was conceived as a voluntary initiative aimed at developing and making publicly available screening-level health and environmental effects information on chemicals manufactured in or imported into the United States in quantities greater than one million pounds per year. In the Challenge Program, producers and importers of HPV chemicals voluntarily sponsored chemicals; sponsorship entailed the identification and initial assessment of the adequacy of existing toxicity data/information, conducting new testing if adequate data did not exist, and making both new and existing data and information available to the public. Each complete data submission contains data on 18 internationally agreed to “SIDS” (Screening Information Data Set<sup>1,2</sup>) endpoints that are screening-level indicators of potential hazards (toxicity) for humans or the environment.

The Environmental Protection Agency’s Office of Pollution Prevention and Toxics (OPPT) is evaluating the data submitted in the HPV Challenge Program on approximately 1400 sponsored chemicals by developing hazard characterizations (HCs). These HCs consist of an evaluation of the quality and completeness of the data set provided in the Challenge Program submissions. They are not intended to be definitive statements regarding the possibility of unreasonable risk of injury to health or the environment.

The evaluation is performed according to established EPA guidance<sup>2,3</sup> and is based primarily on hazard data provided by sponsors; however, in preparing the hazard characterization, EPA considered its own comments and public comments on the original submission as well as the sponsor’s responses to comments and revisions made to the submission. In order to determine whether any new hazard information was developed since the time of the HPV submission, a search of the following databases was made from one year prior to the date of the HPV Challenge submission to the present: (ChemID to locate available data sources including Medline/PubMed, Toxline, HSDB, IRIS, NTP, ATSDR, IARC, EXTOXNET, EPA SRS, etc.), STN/CAS online databases (Registry file for locators, ChemAbs for toxicology data, RTECS, Merck, etc.) and Science Direct. OPPT’s focus on these specific sources is based on their being of high quality, highly relevant to hazard characterization, and publicly available.

OPPT does not develop HCs for those HPV chemicals which have already been assessed internationally through the HPV program of the Organization for Economic Cooperation and Development (OECD) and for which Screening Initial Data Set (SIDS) Initial Assessment Reports (SIAR) and SIDS Initial Assessment Profiles (SIAP) are available. These documents are presented in an international forum that involves review and endorsement by governmental authorities around the world. OPPT is an active participant in these meetings and accepts these documents as reliable screening-level hazard assessments.

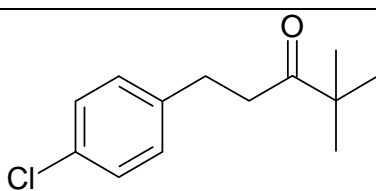
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<sup>1</sup> U.S. EPA. High Production Volume (HPV) Challenge Program; <http://www.epa.gov/chemrtk/index.htm>.

<sup>2</sup> U.S. EPA. HPV Challenge Program – Information Sources; <http://www.epa.gov/chemrtk/pubs/general/guidocs.htm>.

<sup>3</sup> U.S. EPA. Risk Assessment Guidelines; <http://cfpub.epa.gov/ncea/raf/rafguid.cfm>.

These hazard characterizations are technical documents intended to inform subsequent decisions and actions by OPPT. Accordingly, the documents are not written with the goal of informing the general public. However, they do provide a vehicle for public access to a concise assessment of the raw technical data on HPV chemicals and provide information previously not readily available to the public.

<b>Chemical Abstract Service Registry Number (CASRN)</b>	<b>66346-01-8</b>
<b>Chemical Abstract Index Name</b>	<b>3-Pentanone, 1-(4-chlorophenyl)-4,4-dimethyl-</b>
<b>Structural Formula</b>	
<b>Summary</b>	
<p>This chemical is a liquid with moderate water solubility and moderate vapor pressure. It is expected to have moderate mobility in soil. Volatilization of the chemical is considered moderate based on its Henry's Law constant. The rate of hydrolysis is considered negligible. The rate of atmospheric photooxidation is considered slow. The chemical is expected to have high persistence (P3) and low bioaccumulation potential (B1).</p> <p>The acute oral, dermal and inhalation toxicity of the chemical to rats is low. The chemical is irritating to rabbit skin and not irritating to rabbit eyes. An oral combined repeated-dose/reproductive/developmental toxicity screening test in rats showed histopathological effects on the liver and kidney in adult animals at 400 mg/kg/day; the NOAEL for systemic toxicity was 80 mg/kg/day. In the same study, there was no reproductive toxicity at the highest dose tested; the NOAEL for reproductive toxicity was 400 mg/kg/day. Developmental effects included decreased pup weight and pup weight gain at 400 mg/kg/day; the NOAEL for developmental toxicity was 80 mg/kg/day. The chemical did not induce gene mutations in bacteria <i>in vitro</i> and did not induce micronuclei when tested <i>in vivo</i>.</p> <p>The evaluation of available toxicity data for CASRN 66346-01-8 indicates that the measured 96-hour LC<sub>50</sub> of this chemical to fish is 3.74 mg/L, the measured 48-hour EC<sub>50</sub> to aquatic invertebrates is 3.2 mg/L, and the measured 96-hour EC<sub>50</sub> to aquatic plants is 3.3 mg/L (growth) and 2.5 mg/L (biomass).</p> <p>There were no data gaps identified under the HPV Challenge Program.</p>	

The sponsor, Bayer CropScience LP, submitted a Test Plan and Robust Summaries to EPA for 1-(4-chlorophenyl)-4,4-dimethyl-3-pentanone (CASRN 66346-01-8; CA Index Name: 3-pentanone, 1-(4-chlorophenyl)-4,4-dimethyl-) on December 29, 2003. EPA posted the submission on the ChemRTK HPV Challenge website on February 25, 2004 (<http://www.epa.gov/oppt/chemrtk/pubs/summaries/14chld3p/c15000tc.htm>). EPA comments on the original submission were posted to the website on March 10, 2005. Public comments were also received and posted to the website. The sponsor submitted updated/revised documents on February 4, 2008, which were posted to the ChemRTK website on April 21, 2008.

The sponsor, in its original test plan, proposed reduced health effects testing claiming that CASRN 66346-01-8 is a closed-system intermediate (CSI) under the HPV Challenge Program. EPA's evaluation of the original and revised/updated information indicated that the chemical does not meet the criteria to fully support the CSI claim for this chemical and that the chemical does not qualify for reduced testing. Therefore, the sponsor has conducted a combined repeated-dose/reproductive/developmental toxicity screening test to address the repeated-dose/reproductive/developmental toxicity endpoints under the HPV Challenge Program. These data have been used in this hazard assessment.

## **1 Chemical Identity**

### **1.1 Identification and Purity**

The following description is taken from the final Test Plan and Robust Summaries (2008):

CASRN 66346-01-8 is an intermediate used in the production of an agricultural fungicide. It is a yellow liquid of technical grade with a purity of approximately 99.8%.

### **1.2 Physical-Chemical Properties**

The physical-chemical properties of CASRN 66346-01-8 are summarized in Table 1. CASRN 66346-01-8 is a liquid with moderate water solubility and moderate vapor pressure.

Property	Value
CASRN	66346-01-8
Molecular Weight	224.73
Physical State	Liquid
Melting Point	<b>Pour point: 18°C (measured); Solidifying range: 10–16°C (measured)</b>
Boiling Point	<b>270°C (measured)</b>
Vapor Pressure	<b>4.95×10<sup>-4</sup> mm Hg at 20°C (measured)</b>
Water Solubility	<b>20.7 mg/L at 20°C (measured)</b>
Dissociation Constant (pK <sub>a</sub> )	Not applicable
Henry's Law Constant	7.07×10 <sup>-6</sup> atm·m <sup>3</sup> /mole (estimated) <sup>2</sup>
Log K <sub>ow</sub>	3.97 (estimated)

<sup>1</sup>Bayer CropScience LP. February 21, 2008. Revised Robust Summary and Test Plan for 1-(4-Chlorophenyl)-4,4-dimethyl-3-pentanone. <http://www.epa.gov/chemrtk/pubs/summaries/14chld3p/c15000tc.htm>.

<sup>2</sup>U.S. EPA. 2008. Estimation Programs Interface Suite™ for Microsoft® Windows, v 3.20. United States Environmental Protection Agency, Washington, DC, USA. <http://www.epa.gov/opptintr/exposure/pubs/episuite.htm>.

## **2 General Information on Exposure**

### **2.1 Production Volume and Use Pattern**

This chemical had an aggregated production and/or import volume in the United States of 1 million to 10 million pounds in calendar year 2005.

Non-confidential information in the Inventory Update Reporting (IUR)<sup>4</sup> indicated that the industrial processing and uses of the chemical include processing as an intermediate in pesticide and other agricultural chemical manufacturing. Non-confidential information in the IUR indicated that information on commercial and consumer products containing the chemical was “not readily obtainable” (NRO). The High Production Volume (HPV) submission for CASRN 66346-01-8 states that the chemical is primarily used as an intermediate in the production of an agricultural fungicide.<sup>5</sup>

### **2.2 Environmental Exposure and Fate**

No quantitative information is available on the quantity or media of releases of this chemical to the environment.

The environmental fate properties are provided in Table 2. CASRN 66346-01-8 is expected to have moderate mobility in soil. CASRN 66346-01-8 was observed to not biodegrade in a Manometric Respirometry test (duration unspecified). Additionally, CASRN 66346-01-8 was predicted to not be readily biodegradable using BIOWIN v.4.01 which gave an ultimate

<sup>4</sup> USEPA, 2006 Inventory Update Reporting Database.

<sup>5</sup> Bayer CropScience LP, December 29, 2003. HPV Test Plan. Accessed: November 4, 2008. <http://www.epa.gov/chemrtk/pubs/summaries/14chld3p/c15000rt2.pdf>.

biodegradation time of months. The rate of volatilization from water and moist soil is considered moderate based on the estimated Henry's Law constant. The rate of hydrolysis is considered negligible under environmental conditions. CASRN 66346-01-8 is expected to have high persistence (P3) and low bioaccumulation potential (B1).

<b>Property</b>	<b>Value</b>
Photodegradation Half-life	16.5 hours (estimated)
Hydrolysis Half-life	Stable (estimated)
Biodegradation	No biodegradation observed (not readily biodegradable); Primary biodegradation: weeks (estimated); Ultimate biodegradation: months (estimated); Half-life = >1 year (estimated from similar compounds)
Bioconcentration	BCF = 227.7 (estimated) <sup>2</sup>
Log K <sub>oc</sub>	3.041 (estimated) <sup>2</sup>
Fugacity (Level III Model)	Air = 1.16% Water = 22.3% Soil = 72.5% Sediment = 3.99%
Persistence <sup>3</sup>	P3 (high)
Bioaccumulation <sup>3</sup>	B1 (low)

<sup>1</sup>Bayer CropScience LP. February 21, 2008. Revised Robust Summary and Test Plan for 1-(4-Chlorophenyl)-4,4-dimethyl-3-pentanone. <http://www.epa.gov/chemrtk/pubs/summaries/14chld3p/c15000tc.htm>.

<sup>2</sup>U.S. EPA. 2008. Estimation Programs Interface Suite™ for Microsoft® Windows, v 3.20. United States Environmental Protection Agency, Washington, DC, USA. <http://www.epa.gov/opptintr/exposure/pubs/episuite.htm>.

<sup>3</sup>Federal Register. 1999. Category for Persistent, Bioaccumulative, and Toxic New Chemical Substances. *Federal Register* 64, Number 213 (November 4, 1999) pp. 60194–60204.

### **3 Human Health Hazard**

#### ***Acute Oral Toxicity***

(1) Wistar rats (5/sex/dose) were administered CASRN 66346-01-8 (vehicle: demineralized water in 2% Cremophor EL) via gavage at 0, 500, 1000, 2500, 4000 (males only) or 5000 mg/kg-bw and observed for 2 weeks. Deaths occurred 1 – 3 days after administration in male rats given 4000 mg/kg-bw (1 of 5 males) and in male and female rats given 5000 mg/kg-bw (3 of 5 males and 2 of 5 females). The necropsy results were not reported.

**LD<sub>50</sub> = 4748 mg/kg-bw**

(2) Wistar rats (5 males/dose) were administered CASRN 66346-01-8 in 2% Cremophor EL via gavage at 0, 500, 1000, 2000, 2500, 3550, 4000 or 5000 mg/kg-bw and observed for 2 weeks. Mortality was observed in animals treated with ≥ 2000 mg/kg-bw and typically occurred within 1 – 3 days after administration (1 at 2000, 2 at 2500, 2 at 3550, 3 at 4000 and all animals at 5000

mg/kg-bw, respectively). Animals sacrificed at the end of observation period had no indication of test-substance related gross organ damage.

**LD<sub>50</sub> = 3145 mg/kg-bw**

(3) Wistar rats (5 females/dose) were administered CASRN 66346-01-8 in 2% Cremophor EL via gavage at 0, 500, 1000, 2500, 5000 or 7100 mg/kg-bw and observed for 2 weeks. Mortality was observed in animals treated with  $\geq 2500$  mg/kg-bw and occurred within 1 – 4 days after administration (1 at 2500, 2 at 5000 and 4 at 7100 mg/kg-bw, respectively). Animals sacrificed at the end of observation period had no indication of test-substance related gross organ damage.

**LD<sub>50</sub> = 4823 mg/kg-bw**

### ***Acute Inhalation Toxicity***

(1) Wistar rats (10/sex/concentration) were exposed (nose and head only) to an aerosol containing mean measured concentrations of 0, 412, 1237 or 2938 mg/m<sup>3</sup> (equivalent to 0.412, 1.237 or 2.938 mg/L) of CASRN 66346-01-8 in polyethylene glycol E 400-ethanol mixture (1:1) for 4 hours and observed for 2 weeks. No mortality or clinical signs of toxicity were observed throughout the 10-day observation period. Necropsy findings were not reported.

**LC<sub>50</sub> > 2.94 mg/L**

(2) Wistar rats (5/sex/concentration) were exposed (nose only) to an aerosol containing mean measured concentrations of 0, 71.6, 280.9, 739.4 or 1369.9 mg/m<sup>3</sup> (equivalent to 0, 0.072, 0.281, 0.739 or 1.370 mg/L) of CASRN 66346-01-8 in polyethylene glycol E 400-ethanol mixture (1:1) for 4 hours and observed for 2 weeks. No mortalities were observed throughout the 10-day observation period.

**LC<sub>50</sub> > 1.37 mg/L**

(3) Wistar rats (5/sex) were exposed (whole-body) to aerosols containing nominal concentrations of 0.179 (males only) or 0.214 (females only) mg/m<sup>3</sup> (equivalent to 0.000179 or 0.000214 mg/L) of CASRN 66346-01-8 for 7 hours and observed for 2 weeks. No mortality, signs of toxicity or gross pathological changes were observed.

**LC<sub>50</sub> > 0.000214 mg/L**

### ***Acute Dermal Toxicity***

Wistar rats (5/sex) were administered CASRN 66346-01-8 at 5000 mg/kg-bw dermally on to the shaved intact skin under occluded conditions for 24 hours and observed for 14 days. After 24 hours, the application site was cleaned with soap and water. No mortalities, clinical signs or abnormal gross pathological findings were observed.

**LD<sub>50</sub> > 5000 mg/kg-bw**

### ***Repeated-Dose Toxicity***

In a combined repeated-dose/reproductive/developmental toxicity screening test, Wistar rats (12/sex/dose) were administered CASRN 66346-01-8 in 2% Cremophor via oral gavage at 0, 15, 80, and 400 mg/kg-bw/day 2 weeks prior to mating, during mating (14 days), gestation

(approximately 22 days ) and lactation (up to 4 days). There were no treatment-related clinical signs. At 15 and 80 mg/kg-bw/day, no effects were seen on body weight, motor or non locomotor activity, organ weights or histopathology. At 400 mg/kg-bw/day, clinical signs included urogenital staining and salivation after dosing. A decrease in body weight gain was observed in male rats with decrease in absolute body weight (significance not stated). Motor and locomotor activity was non-statistically decreased when compared to the controls. A decrease in terminal body weight was observed in male rats when compared to controls (significance not stated). Increased liver and kidney weights were observed. Histopathological examination revealed hepatocellular hypertrophy in both sexes and nephropathy in males.

**LOAEL = 400 mg/kg-bw/day** (based on effects on liver and kidney)

**NOAEL = 80 mg/kg-bw/day**

### ***Reproductive/Developmental Toxicity***

In the combined oral repeated-dose/reproductive/developmental toxicity screening test in rats, described previously, no test substance-related effects were observed on any reproductive parameters (mating, fertility, or gestation indices, days to insemination, gestation length, or number of implants). No test substance-related effects were observed on mean litter size, clinical signs of toxicity, viability of the pups or birth weight. A decrease in both male and female pup weight and pup weight gain were observed at 400 mg/kg-bw/day from parturition to lactation day 4 (significance not stated).

**NOAEL (reproductive toxicity) = 400 mg/kg-bw/day**

**LOAEL (maternal toxicity) = 400 mg/kg-bw/day** (based on effects on liver and kidney)

**NOAEL (maternal toxicity) = 80 mg/kg-bw/day**

**LOAEL (developmental toxicity) = 400 mg/kg-bw/day** (based on decreased pup weight and pup weight gain)

**NOAEL (developmental toxicity) = 80 mg/kg-bw/day**

### ***Genetic Toxicity – Gene Mutation***

#### ***In vitro***

In a reverse mutation bacterial assay, *Salmonella typhimurium* strains TA98, TA100, TA1535 and TA1537 were exposed to CASRN 66346-01-8 at 8, 40, 200, 1000 or 5000 µg/plate in the presence and absence of metabolic activation. Positive and negative controls were run concurrently and yielded appropriate responses. The cytotoxic concentration was > 25 µg/plate. There was no significant increase of revertants compared to controls.

**CASRN 66346-01-8 was not mutagenic in this assay.**

### ***Genetic Toxicity – Chromosomal Aberrations***

#### ***In vivo***

In a mouse micronucleus assay, CD(SD)IGS BR rats (5 males/dose) were administered single doses of CASRN 66346-01-8 at 0, 100, 500 and 2000 via gavage. Bone marrow was extracted at 24 hours and 48 hours and at least 2000 polychromatic erythrocytes (PCE) per animal were analyzed for the frequency of micronuclei. CASRN 66346-01-8 did not induce clinical signs of

toxicity. The test substance was not cytotoxic to bone marrow. No treatment-related increase was seen in micronucleated PCEs at any dose.

**CASRN 66346-01-8 did not induce micronuclei in this assay.**

### *Additional Information*

#### *Skin Irritation*

Rabbits (3, sex and strain not specified) were administered undiluted CASRN 66346-01-8 on to the skin under occlusive and semi-occlusive conditions for 4 hours in two reported studies. Erythema was observed in both studies (in one of three rabbits under semi-occluded conditions and in three of three rabbits under occluded conditions). The test substance was rated as “not irritating” to “slightly irritating”.

**CASRN 66346-01-8 was slightly irritating to rabbit skin in these studies.**

#### *Eye Irritation*

Rabbits (3, sex and strain not specified) were instilled with 0.1 mL undiluted CASRN 66346-01-8 into the eyes of rabbits for 24 hours in two reported studies. The eyes were rinsed after the exposure period. CASRN 66346-01-8 was not irritating to rabbit eyes in both studies.

**CASRN 66346-01-8 was not irritating to rabbit eyes in these studies.**

**Conclusion:** The acute oral, dermal and inhalation toxicity of CASRN 66346-01-8 to rats is low. CASRN 66346-01-8 is slightly irritating to rabbit skin and not irritating to rabbit eyes. An oral combined repeated-dose/reproductive/developmental toxicity screening test in rats showed histopathological effects on the liver and kidney in adult animals at 400 mg/kg-bw/day; the NOAEL for systemic toxicity was 80 mg/kg-bw/day. In the same study, there was no reproductive toxicity at the highest dose tested; the NOAEL for reproductive toxicity was 400 mg/kg-bw/day. Developmental effects included decreased pup weight and pup weight gain at 400 mg/kg-bw/day; the NOAEL for developmental toxicity was 80 mg/kg-bw/day. CASRN 66346-01-8 did not induce gene mutations in bacteria *in vitro* and did not induce micronuclei when tested *in vivo*.

## **4 Hazards to the Environment**

### *Acute Toxicity to Fish*

(1) Golden orfe (*Leuciscus idus*) (10/concentration) were exposed to CASRN 66346-01-8 at nominal concentrations of 0, 1.00, 1.80, 3.16, 5.62 or 10.0 mg/L under static conditions for 96 hours. Measured concentrations were not provided because except for 10 mg/L, all measured concentrations were > 80% of respective nominal concentrations. Acetone was used as the solvent. Mortality was 100% at 10 mg/L. No signs of toxicity were observed at concentrations ≤ 3.16 mg/L. Slightly irregular swimming behavior was seen at 3.16 mg/L and fish exposed to 5.62 mg/L were observed to be lying on their side or back.

**96-h LC<sub>50</sub> = 4.9 mg/L**

(2) Rainbow trout (*Salmo gairdneri*, 10/concentration) were exposed to CASRN 66346-01-8 at nominal concentrations of 0 (solvent control), 0.50, 0.89, 1.58, 2.81 or 5.00 mg/L under static conditions for 96 hours. Measured concentrations were not provided because except for the lowest concentration, all measured concentrations were > 80% of respective nominal concentrations. Acetone was used as the solvent. Mortality was 100% at 5 mg/L. Slightly irregular swimming behavior was observed in fish exposed to concentrations  $\geq 1.58$  mg/L and dark coloration was seen at concentrations  $\geq 2.81$  mg/L.

**96-h LC<sub>50</sub> = 3.74 mg/L**

#### *Acute Toxicity to Aquatic Invertebrates*

Water fleas (*Daphnia magna*, 30/concentration) were exposed to CASRN 66346-01-8 at nominal concentrations of 0, 1.0, 1.8, 3.2, 5.6 or 10 mg/L under static conditions for 48 hours. Immobilization and/or reduced survival were observed at each of the test concentrations. The 48-hour EC<sub>50</sub> value is based on mobility.

**48-h EC<sub>50</sub> = 3.2 mg/L**

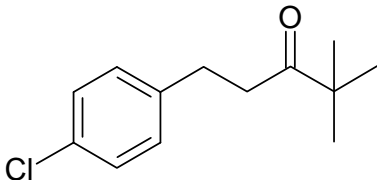
#### *Toxicity to Aquatic Plants*

Green algae (*Pseudokirchneriella subcapitata*) were exposed to CASRN 66346-01-8 at concentrations of 0, solvent control, 0.63, 1.25, 2.5, 5.0, and 10 mg/L under static conditions for 96 hours. Measured concentrations were within 66 to 87% of the nominal concentrations.

**96-h EC<sub>50</sub> (growth) = 3.3 mg/L**

**96-h EC<sub>50</sub> (biomass) = 2.5 mg/L**

**Conclusion:** The evaluation of available toxicity data for CASRN 66346-01-8 indicates that the measured 96-hour LC<sub>50</sub> of this chemical to fish is 3.74 mg/L, the measured 48-hour EC<sub>50</sub> to aquatic invertebrates is 3.2 mg/L, and the measured 96-hour EC<sub>50</sub> to aquatic plants is 3.3 mg/L (growth) and 2.5 mg/L (biomass).

<b>Table 3. Summary Table of the Screening Information Data Set as Submitted under the U.S. HPV Challenge Program</b>	
<b>Endpoints</b>	<b>SPONSORED CHEMICAL 1-(4-Chlorophenyl)-4,4-dimethyl-3- pentanone (CASRN 66346-01-8)</b>
<b>Structure</b>	
<b>Summary of Human Health Data</b>	
<b>Acute Oral Toxicity LD<sub>50</sub> (mg/kg-bw)</b>	<b>3145</b>
<b>Acute Inhalation Toxicity LC<sub>50</sub> (mg/L)</b>	<b>&gt; 2.9</b>
<b>Acute Dermal Toxicity LD<sub>50</sub> (mg/kg-bw)</b>	<b>&gt; 5000</b>
<b>Repeated-Dose Toxicity NOAEL/LOAEL Oral (mg/kg-bw/day)</b>	<b>NOAEL = 80 LOAEL = 400</b>
<b>Reproductive Toxicity NOAEL/LOAEL Oral (mg/kg-bw/day)</b>	<b>NOAEL = 400</b>
<b>Developmental Toxicity NOAEL/LOAEL Oral (mg/kg-bw/day)</b>	
<b>Maternal Toxicity</b>	<b>NOAEL = 80 LOAEL = 400</b>
<b>Developmental Toxicity</b>	<b>NOAEL = 80 LOAEL = 400</b>
<b>Genetic Toxicity – Gene Mutation <i>In vitro</i></b>	<b>Negative</b>
<b>Genetic Toxicity – Chromosomal Aberrations <i>In vivo</i></b>	<b>Negative</b>

<b>Table 3. Summary Table of the Screening Information Data Set as Submitted under the U.S. HPV Challenge Program</b>	
<b>Endpoints</b>	<b>SPONSORED CHEMICAL 1-(4-Chlorophenyl)-4,4-dimethyl-3- pentanone (CASRN 66346-01-8)</b>
<b>Additional Information</b> Dermal irritation Eye irritation	<b>Irritating Not irritating</b>
<b>Summary of Environmental Effects – Aquatic Toxicity Data</b>	
<b>Fish</b> <b>96-h LC<sub>50</sub> (mg/L)</b>	<b>3.7</b>
<b>Aquatic Invertebrates</b> <b>48-h EC<sub>50</sub> (mg/L)</b>	<b>3.2</b>
<b>Aquatic Plants</b> <b>72-h EC<sub>50</sub> (mg/L)</b> <b>(growth)</b> <b>(biomass)</b>	<b>3.3</b> <b>2.5</b>

Measured data in bold text; (RA) = read across; (hdt) = highest dose tested