

June 23, 2025

U.S. Dept. of Labor, OSHA
Attn: Lee Anne Jillings, Director
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U.S. Environmental Protection Agency
Attn: EPA Administrator Lee Zeldin
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Noncompliance Complaint for Violations of the Hazard Communication Standard § 1910.120 in Oil Spill Dispersant Safety Data Sheets: Action Required

Dear Director Jillings and Administrator Zeldin,

We, the undersigned, are hereby filing a noncompliance complaint with the United States Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA). The complaint requests the agencies issue citations and penalties to four dispersant manufacturers for not accurately reporting the detrimental harms to human and environmental health in their safety data sheets as part of right-to-know laws.

The four non-complaint companies are: COREXIT Environmental Solutions LLC, Dasic USA LLC, TotalEnergies Petrochemicals and Refining USA, and Advanced BioCatalytics. Our complaint demands that agencies enforce the content accuracy of these safety documents, as these products are currently listed by EPA for use during oil spill response, and stop the use of dispersants that were approved under false pretenses.

The three new chemical dispersant products – Dasic Ecosafe OSD (“EcoSafe”), Finasol OSR 52 IBC (“Finasol”), and Accell Clean DWD 2.0 – contain the same hazardous surfactants (DOSS for dioctyl sodium sulfosuccinate, Span 80, and Tween 80) as Corexit™ EC9500A, a product that was abruptly discontinued by the manufacturer *before* EPA’s new truth-in-reporting rule was promulgated in mid 2023. Two dispersants, Ecosafe and Finsasol, also contain the same known hazardous solvents (petroleum distillates, hydrotreated light) as Corexit 9500A.

Our concern is urgent. ChampionX, the parent company of COREXIT Environmental Solutions LLC, re-registered Corexit 9500A in the United Kingdom and Brasil in 2024 *before* it was acquired by Schlumberger Limited in 2025. Corexit 9500A was re-registered using a 2019 safety data sheet – the latest available since the product was discontinued: It does not account for more recent studies concerning human health harm from product use. Further, current owners of Corexit stockpiles (primary spill response contractors including those in the U.S.) are considering whether to dispose of their stockpiles of Corexit 9500A by using it as feedstock in the production of the new EcoSafe oil spill dispersant. So, Corexit 9500A by a different name, EcoSafe, could wind up being used in the U.S.

Noncompliance Complaint in Brief

WHY? DUTY

Safety data sheets are required by law as part of the application for listing a product for use in oil spill response. EPA has listed three new dispersants to-date on a transitional product schedule that also includes Corexit 9500A, registered under its 2019 safety data sheet. A new schedule will be published on December 12, 2025. It will list products that have passed the new requirements.

However, EPA's truth-in-reporting rule concerning the impacts or potential impacts of the product to human health or the environment is already in effect.

OSHA and EPA are responsible by law for enforcing the requirements of the hazard communication standard by striving to ensure that information transmitted by chemical manufacturers and importers on their safety data sheets and labels for the hazardous chemicals and mixtures (products) they produce or import is accurate and complete.

Further, OSHA, as a delegate of the Subcommittee of Experts to the United Nations Globally Harmonized System of Classification and Labelling Chemicals, has a duty to report this noncompliance complaint and agency actions for compliance to the subcommittee. Other countries are re-registering Corexit 9500A under false pretenses by using an outdated 2019 safety data sheet that does not account for more recent studies concerning human health harm from product use. When the content of safety data sheets is inaccurate or outdated, it undermines the reliability of a global system that is crucial to protect workers, the public, and the environment. It also undermines the ability of decision-makers to make informed decisions about product use based on anticipated benefits and harms from use.

WHERE? SAFETY DATA SHEETS

The safety data sheets relevant to this complaint are provided in Exhibit A.

WHAT? CONTENT of Noncompliance Complaint

Data sections and key findings

- **Table 1** compares the safety data sheet for Corexit 9500A with the ones for EcoSafe, Finasol, and Accell Clean. *It shows* the new chemical dispersants contain identical key ingredients and are to be used for the same purpose in the same way during oil spill response as Corexit was.
- **Table 2** includes key studies that advanced the understanding of the human and ecological harm caused by the Corexit product and the key ingredients in common with the three new dispersant products. This evidence is organized by body system for humans and by species for animals. *It shows* extensive evidence of impacts to multiple body systems, across species including humans, from exposure to Corexit 9500A, oil-dispersant mixtures, and/or key ingredients that are identical in all four of the products. Further, the post-Deepwater Horizon studies consistently reported that Corexit dispersant, when combined with oil as it is designed to do, cause more harm than oil alone.
- **Tables 3-6** analyze sections 2-4, 6, 8, 11, and 12 of the safety data sheet for each product (Corexit, Table 3; EcoSafe, Table 4; Finasol, Table 5; and Accell Clean, Table 6), using the latest version of the Globally Harmonized System (GHS) Classification Summary (Rev. 10, 2023). *The analysis shows* multiple instances in all four safety data sheets where information was misleading, inaccurate, incorrect, or outdated.¹ The overall impression was a gross

¹ For these noncompliance complaints, we used working definitions for these terms as follows:

MISLEADING means deceiving, confusing, or ambiguous in any matter of fact, giving the wrong idea or impression to have someone believe something that is not true;

INACCURATE means incomplete or unreliable; may contain some correct, factual information, but may have omitted or is missing parts of the record.

INCORRECT means materially false or untrue or lacking in the accurate, full, expected information.

OUTDATED means no longer current; information that has changed since the content was published.

understatement of the truly hazardous nature of these products, based on lessons learned from the BP Deepwater Horizon oil disaster. *Examples follow.*

- Only one of the safety data sheets conformed with the GHS revision 7 in 2024 (Accell Clean); others used the 2012 standards.
- None of the three new safety data sheets identified their product as an inhalation hazard, despite the human experience of initial or delayed symptoms of coughing, wheezing, and difficulty breathing among workers exposed to oil-dispersant mixtures, followed by long-term respiratory diseases – or that the magnitude of harm was greater than for those exposed to oil alone.
- None of the safety data sheets identified and labeled their product to reflect the full range of expected impacts to multiple body systems, across species, as described in the evidence – or that the magnitude of harm was almost always greater from exposure to oil-dispersant mixtures than from oil alone.
- None described all the expected human symptoms fully or in common terms that could be easily understood, as used in the hazard communication standard.
- None communicated that special medical treatment and a systemic approach are needed when symptoms persist – as was the human experience – because these products include respiratory/skin sensitizers, carcinogens, and reproductive toxins as ingredients that are recognized by OSHA and globally as health hazards that can cause long-term harm.
- Only one manufacturer (Accell Clean) described its product as hazardous to the environment with long-lasting effects, yet the evidence strongly indicates that such harm should be expected from an environmental release of any of these four products.
- None truthfully reported the persistence of the surfactant DOSS, an ingredient used in all four dispersants and the main driver of much of the metabolic and cellular havoc and, indirectly, the individual and population-level harm.

Summary and conclusions

The human and ecological evidence strongly indicate that all these products should be classified and labeled according to the expected harm that they may cause, based on their common ingredients and similar purpose and use as oil spill dispersants. Specifically, they:

- May cause skin corrosion/irritation: **H315/GHS07**;
- May cause an allergic skin reaction (sensitization): **H317/GHS07**;
- May cause serious eye damage/irritation: **H318/GHS05**;
- Are harmful if inhaled: **H332/GHS07**;
- May cause allergy or asthma symptoms or breathing difficulties if inhaled: **H334/GHS08**;
- May cause cancer: **H350/GHS08**;
- May cause cancer by inhalation: **H350i/GHS08**;
- May damage the unborn child: **H360D/GHS08**;
- May cause damage to organs through prolonged or repeated exposure: **H373/GHS08**; and
- Are hazardous to the aquatic environment with long-lasting effects: **H410/GHS09**.

If OSHA and EPA do not enforce the accuracy and truthfulness of the safety data sheets, we are in danger of repeating the past mistakes. A recent review on dispersant impacts to birds reported that “(m)any of the... papers identified by the two search engines were policy oriented or model based, with the explicit yet often unsubstantiated assumption that dispersant use is beneficial to marine birds. It is difficult to identify when this largely untested assumption became a rationale for dispersant use in the literature. Indeed, as an example of how accepted this assumption is, minimizing oil spill impacts on marine birds as a principal reason for the use of a dispersant was introduced in the abstract of a recent paper, with no further discussion in the text or citations to support this claim...”

More broadly, through the error of omission of the human and ecological experience with product use – or anticipated product use, the four safety data sheets perpetuate the charade that these dispersants will minimize oil spill impacts on humans and wildlife. Inaction by OSHA and EPA will enable the use that will cause the *known and inevitable harm* to response workers, the exposed public, and the environment.

Recommended actions

We therefore request the following actions:

1. OSHA notifies the manufacturers Corexit Environmental Solutions (for Corexit, Dasic USA LLC (for EcoSafe), TotalEnergies Petrochemicals & Refining USA (for Finasol), and Advanced BioCatalytics (for Accell Clean),² in writing that:
 - The content of their safety data sheets for the referenced dispersant products is inaccurate and in noncompliance with the GHS revision 7 that was promulgated in the U.S. in 2024;
 - The manufacturers must recall their products by notifying distributors, importers, and entities that own stockpiled product of the noncompliant safety data sheets with five (5) business days of receipt of the notification letter, and offer full refunds for the product purchase and pay for product returns at the manufacturer's expense; and
 - Citations and penalties will apply for failure to have up-to-date safety data sheets readily available and for not providing relevant, current information on potential impacts to humans and wildlife that can be reasonably expected from product use as oil spill dispersants.
2. EPA notifies each manufacturer in writing that their product will be removed from the National Oil and Hazardous Substances Pollution Contingency Plan's transitional product schedule for failure to provide accurate and current information concerning the impacts or potential impacts of these products to human health and the environment, pursuant to 40 CFR § 300.970, on December 12, 2025, whether or not the new schedule is published, unless EPA receives a new application with an updated safety data sheet that addresses the concerns raised in this complaint by October 10, 2025, and approves it.
3. OSHA and EPA notify the United Nations Subcommittee of Experts for the Globally Harmonized System of Classification and Labelling Chemicals of receipt of the noncompliance complaint, action the agencies have taken for compliance, and a recommendation to adopt a truth-in-reporting guidance similar to EPA rule 40 CFR § 300.970 for all products to help ensure accurate and current content of safety data sheets and maintain the scientific reliability and respectability of this committee and system.

WHO? PRIMARY CONTACTS

The primary contacts for our complaint are:

Dr. Riki Ott, Director of The ALERT Project, riki@alertproject.org

Tom Devine, Legal Director, Government Accountability Project, tom@whistleblower.org

Lesley Pacey, Senior Environmental Officer, lesley@whistleblower.org

² Addresses listed on the safety data sheets are:

Corexit Environmental Solutions, 11177 S. Stadium Drive, Sugar Land, TX 77478

EcoSafe: Dasic USA LLC, 3500 South DuPont Highway, Dover, Delaware 19901

Finasol: TotalEnergies Petrochemicals & Refining USA, Inc. PO Box 674411 Houston, TX 77267-4411

Accell Clean: Advanced BioCatalytics, 18010 SkyPark Circle, Suite 130, Irvine, CA 92614

Most sincerely,

Alaska Community Action on Toxics

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U.N. Subcommittee of Experts Globally Harmonized System	
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Mixtures and Compounds of concern	Corexit 9500A (2019)	Dasic Ecosafe OSD	Finasol OSR 52 IBC	Accell Clean DWD 2.0
Whole product	Acute Tox. (Inhalation) 4, H332 Eye Irrit. 2A, H319	Skin Irrit. 2, H315	Skin Irrit. 2, H315 Serious Eye Damage 1, H318	Acute Oral Tox. 5, H303 Acute Derm. Tox. 5, H313 Skin Irrit. 2, H315 Serious Eye Damage 1, H318 Acute Aquatic Tox. 2, H401
DOSS or DOSS 70 (dioctyl sodium sulfosuccinate; DOSS 70 with hydrotreated light petroleum distillates) Anionic surfactant CAS-No. 577-11-7	10 - 30%	≥ 10 - <15% Skin Irrit. 2 H315 Serious Eye Damage 1, H318	10 - 25% (as DOSS 70%) “Causes skin irritation” “Causes serious eye damage”	20 – 30% Skin Irrit. 2, H315 Serious Eye Damage 1, H318 Acute Aquatic Tox. 3, H402
Sorbitan monooleate (Polysorbate 80; Span 80; Polyoxyethylene (20) sorbitan monooleate) Non-ionic surfactant emulsifier CAS-No. 261338-43-8	PBI* *Proprietary Business Information	PBI	> 30%* *total non-ionic surfactant mixture	<10
Sorbitan Monooleate-E (Polysorbate; Tween 80; Polyoxyethylene - 20) Non-ionic surfactant emulsifier CAS-No. 9005-65-6	PBI	PBI	--* *total non-ionic surfactant mixture	10 - 15%
Petroleum distillates (hydrotreated, light) Solvents CAS-No. 64742-47-8	10 - 30%	≥10 - <15% Asp Tox 1 H304	10 - 25%	
Dipropylene Glycol Methyl Ether (DPNB) Non-ionic surfactant or solvent CAS-No. 34590-94-8		PBI	PBI Skin Irrit. Eye Irrit. Respir. Irrit. Narcotic effects	
Dipropylene Glycol n-Butyl Ether (DPM) Non-ionic surfactant or solvent CAS-No. 29911-28-2		PBI	PBI Skin Irrit. Eye Irrit. Respir. Irrit. Narcotic effects	

¹ Data are from 2024 safety data sheets (unless noted) and the EPA NCP Subpart J Technical Notebook (1/15/2025).

Table 1. Comparison of chemical compounds in oil spill dispersants

6/19/2025

UNIQUE CHEMICAL COMPOUNDS				
Mixtures and Compounds of concern	Corexit 9500A (2019)	Dasic Ecosafe OSD	Finasolv OSR 52 IBC	Accell Clean DWD 2.0
Propylene Glycol Petroleum-based solvent CAS-No. 57-55-6	1 – 5%			
Benzyl alcohol Solvent CAS-No. 100-51-6				<10% Acute Oral Tox. 4, H302 Skin Irrit. 3, H316 Serious Eye Irrit. 2A, H319
(2-methoxymethyl-ethoxy)propanol Solvent CAS-No. 34590-94-8			10 - 25%	
Hexylene glycol Mutual solvent and non-ionic surfactant CAS-No. 107-41-5				<5% Skin Irrit. 2, H315 Serious Eye Irrit. 2A, H319 Reproductive Tox. 2, H361d
“Other anionic surfactants”			15 - 30%	
Sorbitan Trioleate (Polyoxyethylene 20; Polysorbate 85; Tween 85) Non-ionic surfactant CAS-No. 9005-70-3		PBI		
Alcohols, C9-11, Ethoxylated Non-ionic surfactant CAS-No. 8439-46-3				10 – 20%
Fermentation yeast metabolites & water Non-ionic co-surfactant CAS No. 8013-01-2				PBI

Table 2A. Evidence of harm to humans and other species from exposure to oil dispersants		
Concern	Findings in brief	Citation
Eye damage/ irritation		
Corexit NIH	1. A NIH GuLF study found associations between dispersant exposure and symptoms of either respiratory or eye irritation (burning in the nose, throat, lungs, or eyes) remained significant at all work locations from land to offshore, regardless of airborne concentrations of oil exposure (see also, respiratory/skin sensitization, respiratory and skin Target Organ Systemic Toxicity, TOST).	McGowan CJ, et al. 2017. Respiratory, dermal, and eye irritation symptoms associated with Corexit™ EC9527A/EC9500A following the BP Deepwater Horizon oil spill: Findings from the GuLF STUDY. <i>Environ Health Perspect.</i> Sep, 125(9): 097015. doi: 10.1289/EHP1677
HEALTH HAZARDS WITH NO SAFE LEVELS OF EXPOSURE		
Respiratory/skin sensitizers		
DOSS Diocetyl sodium sulfosuccinate	2. Classification of Corexit 9500A <i>as a potent sensitizer</i> and DOSS <i>as a moderate sensitizer</i> : In lab studies, dermal exposure to mice induced a Th1-cell-mediated immunological response at working concentrations used during the BP Deepwater Horizon disaster response.	Anderson SE, et al. 2011. Potential immunotoxicological health effects following exposure to COREXIT 9500A during cleanup of the Deepwater Horizon oil spill. <i>J Toxicol Environ Health A</i> 74: 1419–1430.
Corexit	3. At the time of the NIH GuLF study enrollment 1–3 years after the BP Deepwater Horizon disaster, dispersant exposure remained significantly associated with the prevalence of most symptoms for respiratory and eye irritation among those who had reported initial symptoms—and among those who had <i>not</i> reported initial symptoms, indicating the presence of a respiratory sensitizer (see eye, skin TOST).	See study 1, McGowan CJ, et al. 2017. Respiratory, dermal, and eye irritation symptoms associated with Corexit.
	4. A follow up NIH GuLF study found increased risk of asthma in oil spill workers 1–3 years after exposure increased with exposure levels and was driven largely by wheeze symptoms rather than asthma <i>per se</i> , reflecting differences between those with and without access to medical care and a true undercounting of clinical asthma in this medically-underserved population. ¹	Lawrence KG, et al. 2022. Associations between airborne crude oil chemicals and symptom-based asthma. <i>Environ Int.</i> 167:107433. doi: 10.1016/j.envint.2022.107433 Note: “In this context [of human experience], hypersensitivity is normally seen as asthma.” § 1910.1200 A.4.2.1.2.1.

¹ This study did not account for dispersant exposure, however a USCG study found “appreciable overlap” of 91.1% between those reporting oil exposure and those reporting dispersant exposure. Rusiecki J, et al. 2017. The Deepwater Horizon oil spill Coast Guard cohort study. *Occup Environ Med.* Mar, 75(3):165-175. doi: [10.1136/oemed-2017-104343](https://doi.org/10.1136/oemed-2017-104343).

Concern	Findings in brief	Citation
Carcinogens		
Corexit	<p>5. In lab studies with human bronchial epithelial cells, Corexit dispersants 9500A and 9527A triggered enhanced production of reactive oxygen species at the highest test level and significantly higher cell death with more pronounced response in the 9527A tests.</p>	<p>Shi Y, Roy-Engel AM, Wang H. 2013. Effects of COREXIT dispersants on cytotoxicity parameters in a cultured human bronchial airway cells, BEAS-2B. <i>J Toxicol Environ Health A</i> 2013; 76: 827–835. doi: 10.1080/15287394.2013.821396</p>
	<p>6. In lab studies with human bronchial epithelial cells, oil-Corexit mixtures (whole and water-accommodated fractions) promoted more double- and single-stranded DNA breaks and activation of DNA damage response mechanisms than oil alone.</p>	<p>Major D, et al. 2016. Effects of Corexit oil dispersants and the WAF [water-accommodated fraction] of dispersed oil on DNA damage and repair in cultured human bronchial airway cells, BEAS-2B. <i>Gene Rep</i> 3:22-30. doi: 10.1016/j.genrep.2015.12.002</p>
	<p>7. In lab studies with human bronchial epithelial cells, an oil-9527A mixture induced a pattern of change towards cancer development by promoting a greater number of RNA transcription errors that blocked various receptors for protein processing and signaling than found in cells after tests with oil-9500A.</p>	<p>Liu YZ, et al. 2016. The impact of oil spill to lung health – Insights from an RNA -seq study of human airway epithelial cells. <i>Gene</i> 578(1):38-51. doi: 10.1016/j.gene.2015.12.016</p>
	<p>8. In lab studies with human bronchial epithelial cells, an oil-9527A mixture elicited the most pronounced effects on DNA damage and proliferation by initiating 27 cancer pathways compared to 8 for the oil-9500A mixture; also, oil-9527A functionally shifted the small lung cancer pathway to a smaller set of genes that have even more cancer pathways.</p>	<p>Liu YZ, et al. 2017. Carcinogenic effects of oil dispersants: A KEGG pathway-based RNA-seq study of human airway epithelial cells. <i>Gene</i> 602:16-23. https://pubmed.ncbi.nlm.nih.gov/27866042/</p>
	<p>9. In lab studies with mice models, exposure to oil-dispersant mixtures promoted more genotoxicity and DNA damage, cell death, inflammation, and tumor formation in the pulmonary system than exposures to oil or dispersant alone; also, tests with Corexit 9527A triggered more cancer pathways than tests with Corexit 9500A (19 vs. 7, respectively).</p>	<p>Liu YZ, et al. 2020. The Impact of the Deepwater Horizon Oil Spill upon Lung Health-Mouse Model-Based RNA-Seq Analyses. <i>Int J Environ Res Public Health</i>. Jul 29;17(15):5466. doi: 10.3390/ijerph17155466</p>

Concern	Findings in brief	Citation
Reproductive toxins		
Corexit and DOSS	10. A lab study with mouse P19 embryonal pluripotent cells found Corexit 9527A interferes with retinol signaling and neuronal differentiation (brain and spinal cord) that are critical to survival; DOSS was a major, if not the only, ingredient responsible for the observed adverse effects; Corexit 9500A was more cytotoxic.	Chen Y, Reese DH. 2016. Corexit-EC9527A disrupts retinol signaling and neuronal differentiation in P19 embryonal pluripotent cells. <i>PLoS ONE</i> 11(9): e0163724. https://pubmed.ncbi.nlm.nih.gov/27684493/
HEALTH HAZARDS WITH TARGET ORGAN SYSTEMIC TOXICITY (TOST) (Lab studies = Single exposure; Epidemiology studies = Repeated exposures)		
Respiratory System		
Corexit	11. In a lab study across species, Corexit 9500A altered membrane permeability of respiratory epithelial cells from human and mice lungs and gills of zebrafish and blue crab through inflammation of cell tissue and cleavage of key proteins, leading to cell death.	Li FJ, et al. 2015. Heme oxygenase-1 protects Corexit 9500A-induced respiratory epithelial injury across species. <i>PLoS ONE</i> 10(4):e0122275. https://doi.org/10.1371/journal.pone.0122275
	12. A NIH GuLF study found airborne dispersant exposure was significantly associated with adverse respiratory and eye irritation despite PPE use (absent respirators) reported by 48% of the participants in the respiratory analysis group. Other findings indicated presence of a respirator sensitizer (see also eye, respiratory/skin sensitization, and skin TOST).	See study 1, McGowan CJ, et al. 2017. Respiratory, dermal, and eye irritation symptoms associated with Corexit.
	13. A 2018 USCG study on dispersant exposure via inhalation found that relationships between oil-dispersant exposures and symptoms of coughing, shortness of breath, and wheezing among disaster responders were much greater in magnitude (more pronounced) than for oil alone (see also skin TOST).	Alexander M, et al. 2018. The Deepwater Horizon Coast Guard cohort study: A cross-sectional study of acute respiratory health symptoms. <i>Environ Res.</i> Apr, 162:196-202. doi: 10.1016/j.envres.2017.11.044
	14. A 2022 USCG follow up study on dispersant exposure via inhalation found that associations between inhalation of crude oil and dispersant vapors and chronic respiratory <i>conditions</i> (as diagnosed illnesses) after 5 years were “appreciably greater” (more pronounced) than for crude oil-only exposures.	Rusiecki J, et al. 2022. Incidence of chronic respiratory conditions among oil spill responders: Five years of follow-up in the Deepwater Horizon oil spill Coast Guard cohort study. <i>Environ Res.</i> Jan; 203:111824. doi: 10.1016/j.envres.2021.111824 .

Concern	Findings in brief	Citation
Skin (Integumentary) System		
Corexit	<p>15. In a lab study, Corexit 9500A altered intracellular oxidative states and led to mitochondrial dysfunction and apoptosis (cell death) in mice skin cells (see also nervous and urinary systems).</p>	<p>Zheng M, et al. 2014. Evaluation of differential cytotoxic effects of the oil spill dispersant Corexit 9500A. <i>Life Sci</i>95:108–117. LINK</p>
	<p>16. A NIH GuLF study found that exposure from skin/clothing with Corexit 9527A/9500A was:</p> <ul style="list-style-type: none"> • significantly associated with skin irritation despite “relevant PPE use” reported by 97% of the participants in the dermal analysis group; and • non-significantly but positively associated with excessive hair loss (see also eye, respiratory/ skin sensitizer, and respiratory TOST). 	<p>See study 1, McGowan CJ, et al. 2017. Respiratory, dermal, and eye irritation symptoms associated with Corexit.</p>
	<p>17. A USCG study on dispersant exposure found significant trends between respiratory symptoms of coughing and shortness of breath and increased frequency of dermal dispersant contact (as duration), suggesting that dermal exposure also contributed to respiratory symptoms and followed an exposure-response relationship (see also respiratory TOST).</p>	<p>See study 13, Alexander M, et al. 2018. The BP Deepwater Horizon oil spill Coast Guard cohort study.</p>
	<p>18. Numerous Gulf coast residents exposed to oil and Corexit reported acute and chronic (reoccurring) an intensely itchy rash of small red bumps, later dubbed the “suicide itch” and hair loss.</p>	<p>a) Affidavits of Kindra Arnesen, A.C. Cooper, Jorey Danos, John Gooding, Jamie Griffin, Steve Kolian, Betsey Miller, Michael Robichaux MD, Wilma Subra; In: Government Accountability Project, 2015, Deadly Dispersant Addendum. b) Government Accountability Project, 2020. Ten Years After the Deepwater Horizon. c) The Lori B story (Based on affidavits in Government Accountability Project 2015, 2020). d) Affidavit of John Maas; In: Government Accountability Project, April 2024. DEEP IMPACT.</p>
	<p>19. Corexit dispersants act as a “built-in absorption accelerant,” making uptake of oil by skin absorption, especially for wet skin, rapid and highly efficient. Study also demonstrates that DOSS can persist with oil for 12–20 months (limit of study).</p>	<p>Kirby J III. 2012. Findings of persistency of polycyclic aromatic hydrocarbons in residual tar product sourced from crude oil released during the BP Deepwater Horizon MC252 spill of national significance. Supported by Surfrider Foundation.</p>

Concern	Findings in brief	Citation
Corexit, continued	<p>20. A 2019 review article^a confirms numerous reports from exposed workers (16, 17) and residents (18, 19) during the BP Deepwater Horizon disaster response that exposure to <i>particulate matter</i>* can trigger “alopecia areata” – an autoimmune condition that appears as patchy baldness on the scalp and to <i>oil chemicals</i> (polycyclic aromatic hydrocarbons) can trigger “androgenetic alopecia” – hair loss that follows a predictable pattern of thinning and loss. The BP class action medical claims settlement lists “folliculitis,” a more general term for hair loss.^b</p> <p>*Note: In-situ burning and aerial or surface spraying of dispersants greatly increases formation of particulate matter including aerosols, hazard risk, and impact.²</p>	<p>a) Samra T, Lin RR, Maderal AD. 2024. Review: The effects of environmental pollutants on exposures on hair follicle pathophysiology. <i>Skin Appendage Discord</i> Aug;10:262-272. DOI: 10.1159/000537745</p> <p>b) Plaisance et al. v. <i>BP Exploration & Production</i>. 2012. Deepwater Horizon Medical Benefits Class Action Settlement (Medical Claims Settlement), as amended on May 1, 2012. Case 2:10-md-02179-CJB-SS, <u>Doc. 6427-1</u>, 05/03/12, No. 12-CV-968. Exhibit 8, at 8.</p>
Central and Peripheral Nervous Systems		
Corexit	<p>21. In a 2011 lab study with male rats, whole-body inhalation exposure to Corexit 9500A altered the permeability of the blood-brain barrier, allowing toxic chemicals to flood into the brain and disrupting neurotransmitter signaling in the brain in ways that would change the behavior and performance of the affected individual.</p> <p>22. In a 2014 lab study, Corexit 9500A altered intracellular oxidative states and led to mitochondrial dysfunction and apoptosis (cell death) in human glial cells (i.e., cells that hold nerves in place, the “glue” of the nervous system) and rat neuronal cells (nerve cells that transmit electrical and chemical signals) from the hippocampus (an area of the brain involved in memory, learning, and emotion), and others impacts (see also urinary system and skin system).</p>	<p>Sriram K, et al. 2011. Neurotoxicity following acute inhalation exposure to the oil dispersant COREXIT EC9500A. <i>J Toxicol Environ Health A</i> 74: 1405–1418. https://www.tandfonline.com/doi/full/10.1080/15287394.2011.606796</p> <p>See study 15, Zheng M, et al. 2014. Evaluation of differential cytotoxic effects Corexit 9500A.</p>

² **In-situ burns:** Pratt GC, et al. 2020. Modeled air pollution from the in situ burning and flaring of oil and gas released following the Deepwater Horizon disaster. *Ann Work Exp & Health* 66(Suppl 1):i172i187. DOI; Chen D, et al. 2022. Fine particulate matter and lung function among burning-exposed [BP] Deepwater Horizon oil spill workers. *Environ Health Perspect*. Feb. 130(2): 27001. DOI.

Aerial spraying: Afshar-Mohajer N, et al. 2018. A laboratory study of particulate and gaseous emissions from crude oil and crude oil-dispersant contaminated seawater due to breaking waves. *Atmospheric Environ*. 179:177-186. DOI; Afshar-Mohajer N, et al., 2020. Impact of dispersant on crude oil content of airborne fine particulate matter emitted from seawater after an oil spill. *Chemosphere* 256; 127063. DOI.

Concern	Findings in brief	Citation
Corexit, Skin continued	23. A USCG study found inhalation or skin contact of crude oil spill exposure during the response increased the likelihood of neurological symptoms – headaches, lightheadedness, difficulty concentrating, numbness/tingling sensation, blurred vision, and memory loss/ confusion; impacts were more pronounced from exposure to both oil and oil dispersants than for oil alone.	Krishnamurthy JK, et al. 2019. Neurological symptoms associated with oil spill response exposures: Results from the Deepwater Horizon oil spill Coast Guard cohort study. <i>Environ Intl.</i> Oct 163:104963. doi: 10.1016/j.envint.2019.104963.
	24. A NIH GuLF study found persistent neurological damage 4–6 years after the oil spill in neurobehavioral function of sustained attention, memory, executive function, and coding (response speed) from airborne exposures to oil spill vapors; the magnitude of the deficit for response speed was the equivalent of aging 4 to 9 years.	Quist AJL, Rohlman DS, Kwok RK, et al. 2019. Deepwater Horizon oil spill exposures and neurobehavioral function in GuLF STUDY participants. <i>Environ Res.</i> Dec;179(Pt B):108834. doi: 10.1016/j.envres.2019.108834.
Cardiovascular System		
Corexit	25. Crude oil volatile organic compounds and n-hexane were found in the blood of workers, coastal residents, and children during peak emissions of the BP oil disaster at very high levels associated with end organ damage.	Summarco PW, et al., 2016. Concentrations in human blood of petroleum hydrocarbons associated with the BP Deepwater Horizon oil spill, Gulf of Mexico. <i>Arch Toxicol</i> 90(4):829-37. doi: 10.1007/s00204-015-1526-5
	26. Residual levels of oil contaminants were still evident in blood 1–3 years later (Doherty et al., 2017) and they still carried the signature of once-high levels of oil components even as the overall levels returned to background (Werder et al., 2019).	a) Doherty BT, et al., 2017. Associations between blood BTEXS concentrations and hematological parameters among adult residents of the U.S. Gulf states, Table 2. <i>Environ Res</i> 26;156:579-587. doi:10.1016/j.envres.2017.03.048 b) Werder EJ, et al., 2019. Blood BTEX levels and neurologic symptoms in Gulf states residents. <i>Environ Res</i> Aug 175:100-107. https://pubmed.ncbi.nlm.nih.gov/31108353/
	27. A 2022 USCG study found increased cardiovascular symptoms – chest pain, arrhythmia or irregular heartbeats – from increased exposure to crude oil and oil-dispersant via skin contact and inhalation. Impacts were more pronounced from exposure to both oil and dispersants than for oil or dispersant alone.	Denic-Roberts H, et al., 2022. Acute and longer-term cardiovascular conditions in the Deepwater Horizon oil spill Coast Guard cohort. <i>Environ Intl.</i> 158: doi.org/10.1016/j.envint.2021.106937

Concern	Findings in brief	Citation
Corexit, Cardiovascular continued	<p>28. A 2019 NIH GuLF study 5-years after the oil spill found increased risk of heart attacks and fatal coronary heart disease were associated with longer duration of response work, residential proximity of the spill,^a and higher estimated exposure to total hydrocarbons.^b</p>	<p>a) Strelitz J, et al. 2019a. Self-reported myocardial infarction and fatal coronary heart disease among oil spill workers and community members 5 years after Deepwater Horizon. <i>Environ Res.</i> Jan 168:70–79. doi: 10.1016/j.envres.2018.09.026.</p> <p>b) Strelitz J, et al., 2019b. Exposure to total hydrocarbons during cleanup of the Deepwater Horizon oil spill and risk of heart attack across 5 years of follow-up. <i>Amer J Epidemiology</i> May 188;5:917–927. https://doi.org/10.1093/aje/kwz017</p>
Endocrine System		
Corexit components – Span 80 Sorbitan monooleate – Tween 80 Sorbitan monooleate-E – DOSS dioctyl sodium sulfosuccinate RXR α = Retinoid X Receptor <i>alpha</i>	<p>29. A 2016 lab study with human embryo kidney tissue and mouse tissue found that Corexit component Span 80 and to a lesser extent Tween 80:</p> <ul style="list-style-type: none"> • Have RXRα transactivation activity that promotes differentiation of stem cells into preadipocytes (precursors of mature fat cells); and • Combine with DOSS to increase adipocyte differentiation (i.e., creation of fat cells) substantially more than treatment with either chemical by itself, likely increasing the obesogenic potential of Corexit dispersants. <p>Note: RXRs are receptor proteins that bind to DNA; adipose tissue stores energy and releases hormones and cytokines (proteins) that regulate the immune system and metabolism; obesogens are chemicals that promote weight gain or obesity by interfering with the body’s normal hormonal and metabolic processes.)</p>	<p>Bowers RR, et al. 2016. The commonly used nonionic surfactant Span 80 has RXRα transactivation activity, which likely increases the obesogenic potential of oil dispersants and food emulsifiers. <i>Gen Comp Endocrinol.</i> 238:61–8. https://pubmed.ncbi.nlm.nih.gov/27131391/</p>
Corexit component DOSS PPAR γ = Peroxisome Proliferator-Activated Receptor <i>gamma</i>	<p>30. A 2016 lab study classified DOSS as a probable obesogen in humans and male mice, based on increased PPARγ activity after exposure to oil and Corexit mixtures. Other main ingredients of Corexit – Span 80, petroleum distillates, and propylene glycol – did not have PPARγ activity and are not considered obesogens.</p> <p>Note: PPARs are receptor proteins that bind to DNA and promote ligand-dependent transcription of target genes that regulate energy production, lipid metabolism, and inflammation; ligands are molecules that bind metal atoms.</p>	<p>Temkin AM, et al. 2016. Effects of Crude Oil/Dispersant Mixture and Dispersant Components on PPARγ Activity in Vitro and in Vivo: Identification of Dioctyl Sodium Sulfosuccinate (DOSS; CAS #577-11-7) as a Probable Obesogen. <i>Environ Health Perspect.</i> 2016;124(1):112–9 https://pubmed.ncbi.nlm.nih.gov/26135921/</p>

Concern	Findings in brief	Citation
DOSS Endocrine System continued	<p>31. A 2019 lab study with mice found DOSS exposure to pregnant females led to increased adiposity (obesity), inflammation, metabolic disorder (any condition that disrupts the body's chemical processes that convert nutrients into energy and building blocks for growth, repair, and other vital functions), and dyslipidemia (abnormal high levels of lipids (fat) in blood) in adult male (but not female) offspring; study suggested that developmental DOSS exposure during human pregnancy might contribute to long-term obesity-related health concerns in offspring.</p>	<p>Temkin AM, et al. 2019. Increased adiposity, inflammation, metabolic disruption and dyslipidemia in adult male offspring of DOSS treated C57BL/6 dams. <i>Sci Rep.</i> Feb 2019;9(1):1530. https://pubmed.ncbi.nlm.nih.gov/30728429/</p>
	<p>32. A 2025 USCG study found oil spill exposures were associated with increased risks for the following longer-term endocrine and metabolic conditions:</p> <ul style="list-style-type: none"> • simple goiters (from underactive thyroid gland) increasing risk of weight gain and fatigue, among other health problems; • disorders of lipid metabolism, dysmetabolic syndrome X, overweight, obesity, and abnormal weight gain, increased risk of high cholesterol (hyperlipidemia), heart attack, stroke, and type 2 diabetes, among other health problems. <p>Impacts were more pronounced from exposure to both oil and oil dispersants than for oil alone.</p>	<p>Denic-Roberts H, et al. 2025. Risk of longer-term endocrine and metabolic conditions in the Deepwater Horizon Oil Spill Coast Guard cohort study – five years of follow-up. <i>Environ Health</i> 24, 12 (2025). https://doi.org/10.1186/s12940-025-01164-9</p>
Urinary System		
Corexit	<p>33. In a 2014 lab study, Corexit 9500A altered intracellular oxidative states and led to mitochondrial dysfunction and apoptosis (cell death) in human embryo and adult kidney cells (see also nervous system and skin system).</p>	<p>See study 15, Zheng M, et al. 2014. Evaluation of differential cytotoxic effects Corexit 9500A.</p>
	<p>34. A 2018 study found that male mice treated with either Deepwater Horizon oil or Corexit had altered white blood cells and platelet counts and altered lipid profiles that induced toxic effects on kidney (urinary system) and liver (GI system) functions. Impacts were more pronounced when the mice were treated with a mixture of oil and Corexit.</p>	<p>Ramesh S, et al. 2018. Evaluation of behavioral parameters, hematological markers, liver and kidney functions in rodents exposed to Deepwater Horizon crude oil and Corexit. <i>Life Sci.</i> 2018;199:34–40.</p>

Note: The **Immune System** is a network of biological systems, not a stand-alone system. Immune system impairment from exposure to Corexit or oil-dispersant mixtures was found across species in mice (2, 29), humans (20, 29), oysters (58), fish (61), birds (66), and dolphin (71).

Table 2B. Evidence of harm to marine species exposed to oil dispersant Corexit 9500A		
Concern	Findings in brief	Citation
Bacteria	51. Corexit 9500A and oil inhibited population growth of a key bacteria oil degrader (marinobacters), slowing overall biodegradation of oil to where oil alone (without dispersant) was degraded significantly faster by the uninhibited marinobacters.	Kleindienst S, et al. 2015. Chemical dispersants can suppress the activity of natural oil-degrading microorganisms. <i>PNAS</i> . 2015 112(48):14900–14905. http://www.pnas.org/cgi/doi/10.1073/pnas.1507380112
Zooplankton	52. Acute toxicity to <i>Brachionus manjavacas</i> (rotifer, a zooplankton) increased “up to 52-fold” when Corexit 9500A and oil were mixed at the ratio used for oil spills.	Rico-Martínez R, et al. 2013. Synergistic toxicity of Macondo crude oil and dispersant Corexit 9500A to the <i>Brachionus plicatilis</i> species complex (Rotifera). <i>Environ Poll</i> 173:5-10. LINK
	53. “... Corexit 9500A is highly toxic to microzooplankton, particularly to small ciliates, and ... the combination of dispersant with crude oil significantly increases the toxicity of crude oil to microzooplankton. The ... [impact] on microzooplankton may disrupt the transfer of energy from lower to higher trophic levels and change the structure and dynamics of marine planktonic communities.”	Almeda, R, et al. 2014. Toxicity of dispersant Corexit 9500A and crude oil to marine microzooplankton. <i>Ecotoxicol Environ Saf</i> . 106:76–85. https://pubmed.ncbi.nlm.nih.gov/24836881/
	54. Exposure to Corexit 9500A and oil removed key grazers of phytoplankton in coastal waters (tintinnids and ciliates) and disrupted predator-prey controls that allowed dinoflagellates more tolerant of oil and dispersant to flourish, triggering toxic red tide blooms that can be harmful to humans and other life.	Almeda R, et al. 2018. Oil spills and dispersants can cause the initiation of potentially harmful dinoflagellate blooms (“red tides”). <i>Environ Sci Technol</i> 52 (10): 5718-5724. doi: 10.1021/acs.est.8b00335
Deep sea coral	55. Three deep-sea, cold-water corals that live the Gulf of Mexico “... showed more severe declines in health in response to dispersant alone and the oil–dispersant mixtures than the oil-only treatments.” Dispersant and oil/dispersant exposures proved lethal to all three species.	DeLeo D, et al. 2016. Response of deep-water corals to oil and chemical dispersant exposure. <i>Deep Sea Res. Part II: Topical Studies in Oceanography</i> , 129:137–147. https://doi.org/10.1016/j.dsr2.2015.02.028
	56. Endosymbionts of another deep-water coral suffered mortality within 48 hours after exposure to Corexit or a combination of oil and Corexit, while those exposed only to oil were “relatively unaffected.” Endosymbionts play a vital role in the health of coral reef ecosystems by providing nutrition (via photosynthesis) for their host corals.	Frometa J, et al. 2017. Toxicity of oil and dispersant on the deep-water gorgonian octocoral <i>Swiftia exserta</i> , with implications for the effects of the Deepwater Horizon oil spill. <i>Mar Poll Bull</i> . 122(1–2):91–99. https://pubmed.ncbi.nlm.nih.gov/28666594/

Table 2B. Evidence of harm: Ecological experience.

6/20/2025

Concern	Findings in brief	Citation
Deep sea coral continued	57. Low concentrations of dispersant and oil-dispersant mixtures “may eliminate” (i.e., were extremely toxic to) free-living forms of coral endosymbionts that are “vital for fertilizing new coral larvae and restoring bleached corals...”	Varasteh T, et al. 2024. The dispersant Corexit 9500 and (dispersed) oil are lethal to coral endosymbionts. <i>Mar Poll Bull.</i> June 203:116491. https://pubmed.ncbi.nlm.nih.gov/38754321/
Oysters	58. Oysters exposed to Corexit 9500A with and without oil experienced alterations of important immune and respiratory functions that could result in serious health outcomes such as increased parasitism and decreased growth. Harm was more pronounced for oil-dispersant and Corexit-only exposures.	Lindsay J, et al. 2018. Comparative toxicity of Corexit® 9500, oil, and a Corexit®/oil mixture on the eastern oyster, <i>Crassostrea virginica</i> (Gmelin), <i>Aqua Toxicol.</i> Vol. 203:10-18. https://doi.org/10.1016/j.aquatox.2018.07.015
Fish (and Crabs)	59. In a lab study across species, Corexit 9500A altered membrane permeability of respiratory epithelial cells in gills of zebrafish and blue crab (and lungs human and mice) through inflammation of cell tissue and cleavage of key proteins, leading to cell death.	See study 11, Li FJ, et al. 2015. Respiratory epithelial injury across species.
	60. Corexit 9500A impaired gill function of larval, juvenile, and adult killifish, disrupting osmoregulation and impairing survival. The magnitude of harm increased as the gills developed. Authors suggested this occurred via “amphipathic anionic surfactants” (such as DOSS) that facilitate the mixing of aqueous and lipid phases such as water and oil (to break up surface oil slicks) but also water and the biological membranes of the gills.	Brown C, Williamson K, Galvez F. 2019. The influence of salinity on the toxicity of Corexit at multiple life stages of Gulf killifish. <i>Comp Biochem Physiol C Toxicol Pharmacol.</i> Jul; 221:38-48. doi:10.1016/j.cbpc.2019.03.004
	61. Adult sheepshead minnows experienced significant changes to hepatic (relating to liver) gene expression after exposure to oil, Corexit, an oil-Corexit mixture; changes in the dispersant exposures were more pronounced than oil alone. The majority of the altered pathways related to immunity, followed by blood, and circulation processes. Alterations suggest that low-concentration exposures may have adverse effects on survival.	Jones ER, et al. 2017. Exposure to Deepwater Horizon oil and Corexit 9500 at low concentrations induces transcriptional changes and alters immune transcriptional pathways in sheepshead minnows. <i>Comp Biochem Physiol Part D Genomics Proteomics.</i> Sep;23:8-16. doi:10.1016/j.cbd.2017.05.001
	62. Indirect evidence: “... a considerable portion of upper pelagic water samples (nearly one-third) collected during the active spill phase of the BP Deepwater Horizon disaster had PAH concentrations above thresholds for arrhythmias in the developing hearts of tunas and amberjack. However, this approximation may be low given the limited sampling in areas with high surface oiling because of ... access restrictions.” (See footnote 1 for physical overlap of oil and dispersant.)	Incardona JP, et al. 2014. Deepwater Horizon crude oil impacts the developing hearts of large predatory pelagic fish. <i>Proc Nat Acad Sci</i> , online March 24, E1510–E1518. https://www.pnas.org/doi/pdf/10.1073/pnas.1320950111

Concern	Findings in brief	Citation
Birds	<p>63-64. Dispersants and dispersant–oil mixtures caused catastrophic loss of waterproofing of marine seabird feathers like that from oil alone (63). In some seabirds (eiders) the mixture effect was greater than from oil alone (64). Preening spread the contamination, increasing the loss of waterproofing (64).</p> <p>65. Conjunctivitis was associated with exposure of common murres to dispersant and an oil-dispersant mixture and corneal ulcers with dispersant exposure when exposed to a high concentration of oil. Vision injury would hamper foraging ability and reduce survival.</p> <p>66. Hatchlings of mallard eggs treated with oil-dispersant mixtures of Corexit 9500A or Finosol OSR had lower spleen weights than those treated to crude oil alone. Injury to the spleen, an immune organ, would impair immune responses and increase risk of pathogens and disease.</p> <p>67. A review of dispersant impacts on marine birds reported extensive evidence of harm and recommended a more holistic ecosystem-approach be used when considering dispersant use during response, i.e., one that accounts for dispersants, birds, and habitat.</p>	<p>63. Whitmer ER, et al. 2018. An experimental study of the effects of chemically dispersed oil on feather structure and waterproofing in common murres (<i>Uria aalge</i>). <i>J Wildl Dis.</i> 54(2): 315–328</p> <p>64. Jenssen BM, Ekker M. 1991. Effects of plumage contamination with crude oil dispersant mixtures on thermoregulation in common eiders and mallards. <i>Arch Environ Contam Toxicol.</i> 20:389–403.</p> <p>65. Fiorello CV, et al. 2016. Ophthalmic effects of petroleum dispersant exposure on common murres (<i>Uria aalge</i>): An experimental study. <i>Mar Pollut Bull</i> 113(1–2): 387-391. LINK</p> <p>66. Finch BE, et al., 2012. Embryotoxicity of mixtures of weathered crude oil collected from the Gulf of Mexico and Corexit 9500 in mallard ducks (<i>Anas platyrhynchos</i>). <i>Sci Total Environ</i> 426:155–159. LINK</p> <p>67. Osborne OE, Willie MMC, O’Hara PD. 2023. The effects of oil spill dispersant use on marine birds: A review of scientific literature and identification of information gaps. <i>Environ Reviews</i> Feb; 31(2):243-255. LINK</p>
Sea turtles	<p>68. Loggerhead sea turtle hatchlings exposed to oil-dispersant (Corexit 9500A) mixtures had multiple blood chemistry parameters that were worse than hatchlings exposed to oil alone, and hatchlings exposed to oil-dispersant mixtures or Corexit alone failed to gain weight, jeopardizing their ability to survive.</p> <p>69. A heavily oiled Kemp’s ridley sea turtle had detectable levels of DOSS in its esophageal tissue. Of note is that the (dead) turtle was collected in June 2010 12 nautical miles offshore “where most applications of dispersants were reported to occur” during the time when most juvenile sea turtles are present (May to September) – “surface pelagic juveniles... were the predominant life stage sampled” in 2010–2011.</p>	<p>68. Harms CA, et al. 2014. Clinical pathology effects of crude oil and dispersant on hatchling loggerhead sea turtles (<i>Caretta caretta</i>). <i>Proc. 45th Ann. Intl. Assoc. Aquatic Animal Medicine</i>, Gold Coast, Australia, 17–22; published in 2019. LINK</p> <p>69. Ylitalo GM, et al. 2017. Determining oil and dispersant exposure in sea turtles from the northern Gulf of Mexico resulting from the Deepwater Horizon oil spill. <i>Endangered Species Res</i> 33:9-24. LINK</p> <p>Note: Paper 68 also notes that aquatic life can rapidly take up DOSS and that, similar to their finding, DOSS levels were also low – often below the limit that could be accurately quantified – when found in over 8,000 animals tested for the federal seafood safety program after the Deepwater Horizon disaster.</p>

Concern	Findings in brief	Citation
<p>Whales, Dolphins</p>	<p>70. Corexit 9527A is genotoxic to sperm whale skin cells, causing chromosome damage and abnormalities that negatively impact the whale’s ability to survive and successfully reproduce. Both Corexit 9500A and 9527A are cytotoxic to sperm whale cells, which “can lead to fibrosis and impair organ function.”</p> <p>71. Exposure of bottlenose dolphin lymphocyte cells to oil and Corexit 9500A mixtures resulted in significantly greater immune system suppression of B- and T- cell lymphocytes than to oil alone. Decreased proliferation of these specialized white blood cells leaves marine mammals unable to successfully defend against exposures to oil and synthetic chemicals (such as dispersants) and makes the animals more susceptible to disease.</p> <p>72-75. Indirect evidence: Consistent with these findings long-term studies of Barataria Bay bottlenose dolphins found of high-incidence of lung disease, low levels of cortisol, weight loss (72), failed pregnancies (73), slow recovery (74), and population-level harm (75) with estimated time to stock recovery of 39 years and similar recovery timelines for dolphin stocks across the northern Gulf coast in oil-impacted areas.</p> <p>76. A review of the effects of oil spills on nearshore marine mammals and sea turtles concluded, “It is clear... that marine mammals and sea turtles were directly exposed to unprecedented amounts of oil and dispersants and that the acute and chronic population-level impacts of this exposure were likely high and underestimated based on coastal observations.”</p> <p>77. Widespread population declines in seven species of offshore, oceanic, toothed cetaceans (whales and dolphins) occurred during a 10-year period following the BP Deepwater Horizon disaster. The declines were not conclusively linked with the spill, but “the broad spatial and temporal scale of these declines” was consistent with the oil disaster impacts – and “exceeded and outlasted post-spill damage assessment predictions, suggesting that the offshore ecosystem impacts ... [were] larger than previously thought.</p>	<p>70. Wise CF, et al. 2014. Chemical dispersants used in the Gulf of Mexico oil crisis are cytotoxic and genotoxic to sperm whale skin cells. <i>Aquatic Toxicol</i> 152:335-340. LINK</p> <p>71. White ND, et al. 2017. Immunotoxic effects of in vitro exposure of dolphin lymphocytes to Louisiana sweet crude oil and Corexit™. <i>J Appl Toxicol</i>. Jun;37(6):676-682. doi: 10.1002/jat.3414</p> <p>72. Schwacke L, et al. 2014. Health of common bottlenose dolphins (<i>Tursiops truncatus</i>) in Barataria Bay, Louisiana, following the Deepwater Horizon oil spill. <i>Environ Sci Technol</i>. 48:93–103. LINK</p> <p>73. Lane SM, et al. 2015. Reproductive outcome and survival of common bottlenose dolphins sampled in Barataria Bay, Louisiana, USA, following the BP DHOS. <i>Proc. R. Soc. B</i> 282:20151944. doi: 10.1098/rspb.2015.1944</p> <p>74. Smith CR, et al. 2017. Slow recovery of Barataria Bay dolphin health following the Deepwater Horizon oil spill with evidence of persistent lung disease and impaired stress response. <i>Endangered Species Res</i> 33:127–142. https://www.int-res.com/abstracts/esr/v33/esr00778</p> <p>75. Schwacke L, et al. 2017. Quantifying injury to common bottlenose dolphins from the Deepwater Horizon oil spill using an age-, sex- and class-structured population model. <i>Endangered Species Res</i>. 33:265–279. doi: 10.3354/esr00777</p> <p>76. Frasier KE, et al. 2020. Impacts of the Deepwater Horizon Oil Spill on Marine Mammals and Sea Turtles. <i>In: Murawski S, et al. 2019 Deep Oil Spills</i>. Jun Springer, Cham. https://doi.org/10.1007/978-3-030-11605-7_26</p> <p>77. Frasier KE, et al. 2024. A decade of declines in toothed whale densities following the Deepwater Horizon oil spill. <i>Commun Earth Environ</i> Dec 5:782. https://doi.org/10.1038/s43247-024-01920-8</p>

Table 3. Non-Compliance Complaint for Corexit 9500A Safety Data Sheet

Safety Data Sheet (SDS) Statement, Complaint Overview	Specific Complaint
<p>SDS subtitle This SDS is dated 8/30/2019, yet it is being used to re-register the product in other countries, and it is now being considered for recycling as feedstock for another dispersant, Dasic EcoSafe.¹ OUTDATED.</p>	<p>OUTDATED. OSHA’s hazard communication standard § 1900.1200 and appendices were updated May 20, 2024, (89 FR 44144-44461) to conform to revision 7 (v7) of the globally harmonized system (GHS). Use of an outdated SDS to re-register or recycle products anywhere undermines the reliability of the global system everywhere.</p>
<p>Sec. 2: Hazard(s) Identification [Sec. 2.1 v7]² GHS Classification “Acute toxicity (inhalation): Cat. 4” “Eye irritation: Cat. 2A” INACCURATE (INCOMPLETE). Note: All classifications used in this non-compliance complaint are from the GHS Classification (Rev. 10, 2023) Summary https://pubchem.ncbi.nlm.nih.gov/ghs/</p> <p>[Sec. 2.2 v7] GHS Label elements Missing label elements: INACCURATE.</p> <p>[Sec. 2.3 v7] Other hazards “None known”: INCORRECT (FALSE). Note: Human experience and studies <i>specific to this product</i> or its ingredients (the “evidence” summarized in Table 2) have established that numerous health hazards can be reasonably anticipated from product use as intended, i.e., as a dispersant for oil spill response, by 2019 when this SDS was revised and certainly by 2024 when this outdated and incorrect SDS was used to re-register this product outside the U.S. and to inform decisions in the U.S. whether to use stockpiles as feedstock for Dasic EcoSafe.¹ OSHA requires relevant and accurate information concerning the known or anticipated risks to human health and the environment to be reported on SDSs.</p>	<p>2.1, 2.2. INACCURATE (INCOMPLETE). Missing now required classifications and label elements based on sections 3 and 11 of this SDS and relevant human and ecological evidence. The missing H-Codes (and pictograms) for the hazards reported in Sec. 3 are H304 aspiration toxicity Cat. 1 (GHS08) for petroleum distillates and H315 skin irritant Cat. 2 (GHS07) for DOSS.</p> <p>2.3. INCORRECT (FALSE): Did not report available information – see itemized evidence in Table 2 below. <i>Throughout this document, bold ##</i> indicate publication at least 6 months prior to this SDS revision dated 8/30/2019. See Sec. 11 and 12 for other required classifications and labeling elements.</p> <ul style="list-style-type: none"> Skin/Respiratory sensitizer: 2, 3, 4 Carcinogen: 5, 6, 7, 8, 9 Reproductive toxin: 10 Target Organ Systemic Toxicity for single (lab study) or repeated (epidemiology study) exposures <ul style="list-style-type: none"> - Respiratory system: 1, 11, 12, 13, 14 - Skin (integumentary) system: 15, 16, 17, 18a, 18b-d, 19, 20a, 20b - Central/peripheral nervous systems: 1, 3 (eye); 21, 22, 23, 24 - Cardiovascular system: 25, 26a, 26b, 27, 28a, 28b - Endocrine system: 29, 30, 31, 32 - Urinary system: 33, 34 <p>Further, available evidence from the Deepwater Horizon oil disaster shows oil-dispersant combinations were more toxic than oil alone to aquatic life with long-lasting effects from deep sea coral to seabirds and from bacteria and mesoplankton to sperm whales (51-56, 57, 58-75, 76-77). There are many similar impacts with the human experience (see Sec. 12).</p>

¹ International Assoc. of Oil and Gas Producers, 2025. Corexit availability update. February. https://www.iogp.org/wp-content/uploads/2025/02/IOPG_COREXIT-Update-Letter-to-Industry-Participants-February-2025.pdf

² For comparison with other SDS in this complaint, updated section numbers in GHS v7 are provided in brackets.

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 3: Composition/information on ingredients, 3.2. Mixtures. Missing H-Codes: INACCURATE.</p>	<p>MISSING. Petroleum distillates, hydrotreated light: H304, aspiration toxicity Cat. 1. MISSING. DOSS: H315, skin irritant Cat. 2.</p>
<p>Sec. 4: First-aid measures. [Sec. 4.2 v7] Most important symptoms and effects (acute and delayed) “See Section 11 for more detailed information on health effects and symptoms.” NO delayed or chronic symptoms or effects are reported here (Sec. 4) or Sec. 11: MISLEADING, INACCURATE, INCORRECT, OUTDATED.</p> <p>Note: A hazard class such as “irritant” or a hazard statement such as “causes serious eye irritation” cannot be substituted for a symptom description. Symptoms must be described in common language that is clear and understandable to downstream users, consistent with an OSHA 2010 standard interpretation.³</p> <p>Note: Employers must determine the source of all symptoms including common cold and flu-like symptoms, and, if any are work-related symptoms of chemical illness, the employer must accurately record and report the illnesses, consistent with an OSHA 2023 standard interpretation.⁴</p>	<p>MISLEADING, INACCURATE, INCORRECT, OUTDATED. The evidence of harm in Table 2 is specific to this product and key ingredients that are also common to other products used for similar purposes as oil dispersants (see Table 1). Symptoms described in itemized evidence are followed by references in the hazard communication standard Appendix A to similar descriptions, indicating that this information must be communicated in the SDS.</p> <p>Inhalation symptoms: Expect acute respiratory symptoms such as shortness of breath, difficulty breathing, wheezing, coughing, and burning in the nose, throat, and lungs (1, 12, 13, 14; A.4., A.8.2.2.1), and neurological symptoms such as severe headaches or migraines, nausea or vomiting, dizziness or vertigo, irritability, fatigue, or sleepiness (23, 24; A.8.2.2.2).</p> <p>Skin contact symptoms: Expect symptoms including itching, redness, inflammation, blistering, rashes, lesions, acne, alopecia (hair loss), and fatigue (3, 16–17, 18a, 18b-d, 19, 20a, 20b; A.2, A.4). Skin contact may also be associated with respiratory symptoms (17).</p> <p>Eye contact symptoms: Expect symptoms such as redness, itchiness, tears, burning, blurred vision (1, 3, 12, 23; Table A.3.2) for irritation and conjunctivitis for damage.</p> <p>Delayed symptoms/effects: Expect symptoms such as respiratory/skin sensitization (asthma-like symptom) (3, 4; A.4.2.1.2.1) and chronic rashes (18c-d); chronic coughing, sinusitis, COPD, dyspnea, respiratory abnormalities and fatigue (1, 12, 13, 14, 17); skin abnormalities, hair loss (16, 18a-b, 18c-d, 19, 20a, 20b; A.2, A.4); chronic brain damage with loss of function and memory (23, 24), altered behavior, increased sensitivities to sound, light, odors (18c); long-term endocrine and hormonal disorders with increased risk of obesity or abnormal weight gain, type 2 diabetes (32); and heart attacks and fatal coronary heart disease (25, 26a, 26b, 27, 28a, 28b). Lab studies support the symptoms (2, 15, 21-22, 29-31) and provide evidence of kidney and liver dysfunction (33-34); increased risk of cancers (5–8, 9); multi-generational harm as a reproductive toxin that may damage an unborn child (10).</p>

³ OSHA. 2010. Standard interpretation: OSHA Training standards policy statement. 4/28/2010.

⁴ OSHA. 2023. Standard interpretation: Clarification on the work-related exception in 1904.5(b)(2)(viii) for the common cold or flu. 11/15/2023.

SDS statement, Complaint overview	Specific Complaint
<p>[Sec. 4.3 v7] Immediate medical attention and special treatment, if necessary.</p> <p>Notes to physician: “Treat symptomatically.”</p> <p>DANGEROUSLY MISLEADING, INCORRECT, OUTDATED.</p> <p>See note in Sec. 4.2.</p>	<p>Treatment requires a systemic, not symptomatic, approach. Since 2012, § 1910.1200 A.4.1.1–5 has described a process of respiratory/skin sensitization that is <i>independent</i> of dose, i.e., there is no safe level. The mechanism was published in 2021.⁵ If symptoms persist or repeat, a specialty physician, trained in occupational and environmental medicine, should treat the worker to minimize long-term harm. <i>This is critical information that must be communicated in the SDS.</i></p>
<p>[Sec. 6.2. v7] Environmental precautions</p> <p>“Do not allow contact with soil, surface or ground water.”</p> <p>MISLEADING, INACCURATE.</p>	<p>6.2. MISLEADING, INACCURATE: Since “normal use” involves release of this product into the environment during oil spill response, then the SDS must communicate the expected environmental hazards from releasing the product into the environment based on experience with similar products used for this purpose.</p>
<p>Sec. 11: Toxicological Information</p> <p>[Sec. 4.2 v7] Potential Health Effects</p> <p>Eyes: “Causes serious eye irritation.”</p> <p>Skin: “Health injuries are not known or expected under normal use.”</p> <p>Inhalation: “Harmful if inhaled.”</p> <p>Chronic Exposure: Health injuries are not known or expected under normal use.”</p> <p>Set of four statements: MISLEADING, INCORRECT.</p>	<p>Potential health effects</p> <p>MISLEADING: As previously noted, a hazard class or hazard statement such as “irritation” cannot be substituted for a symptom description which must be described in common language for downstream users, consistent with an OSHA 2010 standard interpretation and descriptions in the hazard communication standard Appendix A. See symptom descriptions in Sec. 4.</p> <p>MISLEADING: This product is specifically manufactured and marketed as an oil dispersant. Therefore, “normal use” is use during an oil spill response. Further, since the product is designed to be sprayed into the environment and combine with oil, it is reasonable to anticipate that “normal use” could pose a health risk to exposed oil spill response workers and the exposed public, not only those who physically handle the product.</p> <p>INCORRECT: Potential health injuries to the skin and from chronic exposures are known and expected from “normal use” (see itemized evidence in Sec. 2 and below).</p>

⁵ Masri S, et al. 2021. Toxicant-induced loss of tolerance for chemicals, foods, and drugs: Assessing patterns of exposure behind a global phenomenon. *Environ Sci Eur* 33:65. [DOI](#); Miller CS, et al. 2021. Mast cell activation may explain many cases of chemical intolerance. *Environ Sci Eur* 33, 129. [DOI](#); see also Hoffman TILT Program online. University of Texas Health–San Antonio. <https://tiltresearch.org/>

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 11: Toxicological Information continued</p> <p>[Sec. 11.1. v7] Experience with human exposure</p> <p>Eye contact: Redness, Pain, Irritation</p> <p>Skin contact: “No symptoms known or expected.”</p> <p>Inhalation: “No information available.”</p> <p>Set of three statements: MISLEADING, INACCURATE, INCORRECT.</p>	<p>Experience with human exposure</p> <p>MISLEADING. Human experience with eye contact also included tears, burning, and blurred vision (1, 3, 23) for “irritation.”</p> <p>INACCURATE, INCORRECT. The human experience for on-site field response workers who were exposed to oil and dispersant via inhalation was significantly associated with acute symptoms and long-term harm to the respiratory system (1, 3, 4, 12, 13, 14, 19), neurological system (23, 24), and cardiovascular system (25, 26a, 26b, 27, 28a, 28b). Lab studies supported the human experience with findings that exposure to oil-dispersant combined: altered membrane permeability of human bronchial epithelial cells and the blood brain barrier (11, 21); and triggered multiple cancer pathways in human bronchial epithelial cells (5, 6, 7, 8) and in mice models (9).</p> <p>The human experience for on-site field response workers who were exposed to oil and dispersant via skin contact was also significantly associated with acute symptoms and long-term harm to the integumentary system (16, 17, 18a, 18b-d, 19, 20b), neurological system (23, 24), and cardiovascular system (27, 28a, 28b). Further, dispersants enhanced uptake of oil across the skin (19), moving oil and dispersant into the blood (25, 26a, 26b).</p> <p>In epidemiology and lab studies, the magnitude of harm was consistently greater from oil-dispersant exposures than from oil alone.</p> <p>Once in the blood (via skin contact or inhalation), the chemical mixture DOSS, alone (30, 31) or in combination with Span 80 or Tween 80 (29) in humans and mice, acts on receptor proteins in the endocrine system in ways that increase the obesogenic potential of this product (Corexit dispersant) and can cause end organ damage (as found in both epidemiology studies) such as obesity, lipid metabolic disorders, and increased risk of high cholesterol, heart attack, stroke, and type 2 diabetes (27, 28a, 28b, 32).</p> <p>The human experience with inhalation and skin contact is well supported by lab studies that found dispersant use greatly increased aerosolization of surface oil slick (20a footnotes) and field studies that found the dominate fate of surface oil was secondary organic aerosols⁶ that were transported at least 80 miles inland.⁷</p>

⁶ Ward CP, et al. et al. **2018**. Partial photochemical oxidation was a dominant fate of *Deepwater Horizon* surface oil. *Environ Sci Technol.* 52, 1797–1805. doi: 10.1021/acs.est.7b05948

⁷ Middlebrook AM, et al. **2012**. Air quality implications of the Deepwater Horizon oil spill. *Proc Nat Acad Sci. Phys Sci.* 109: 20280–5. doi:10.1073/pnas.1110052108

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 11: Toxicological Information continued</p> <p>[Sec. 11.1. v7] Product Toxicity</p> <p>Respiratory or skin sensitization: “Not classified.”</p> <p>Carcinogenicity: “Not classified.”</p> <p>Reproductive toxicity: “Not classified.”</p> <p>STOT-repeated exposure: “Not classified.”</p> <p>Set of 4 hazard statements: MISLEADING, INACCURATE, INCORRECT.</p> <p>Aspiration hazard: Not classified. MISLEADING, INACCURATE (See Sec. 3.)</p>	<p>This human evidence strongly indicates that this product:</p> <ul style="list-style-type: none"> – May cause skin corrosion/irritation: H315/GHS07 – May cause an allergic skin reaction (sensitization): H317/GHS07 – May cause serious eye damage/irritation: H318/GHS05 – Is harmful if inhaled: H332/GHS07 – May cause allergy or asthma symptoms or breathing difficulties if inhaled: H334/GHS08; – May cause cancer: H350/GHS08 – May cause cancer by inhalation: H350i/GHS08 – May damage the unborn child: H360D/GHS08 – May cause damage to organs through prolonged or repeated exposure: H373/GHS08. <p><i>This product should be classified and labelled accordingly.</i></p>
<p>Sec. 12: Ecological information</p> <p>[12.1. v7] Ecotoxicity</p> <p>Environmental Effects: “This product has no known ecotoxicological effects.”</p> <p>MISLEADING, INACCURATE, INCORRECT.</p>	<p>12.1. MISLEADING, INACCURATE, INCORRECT: Ecological experience with Corexit 9500A consistently found that exposure to oil-dispersant mixtures caused greater harm than exposure to oil alone to sea life across species.</p> <p>For example, oil-dispersant mixtures were more toxic than oil alone: to oil-eating bacteria, slowing overall biodegradation of oil (51); to microzooplankton rotifers (52) and ciliates, disrupting predator-prey controls and triggering red tide blooms that are harmful to humans and marine life (53, 54); and to deep-sea corals via endosymbiont partners that provide nutrition (55) and vital services to their coral hosts (56, 57).</p> <p>Dispersant Corexit 9500A altered the permeability of gill membranes in oysters (58), blue crabs (59), and two species of forage fish (59, 60), disrupting osmoregulation and impairing survival, likely facilitated by anionic surfactants (DOSS) (60). The dispersant also altered immune function in oysters and gene expression pathways relating to immunity, blood, and circulation processes in a third species of forage fish (61) and is likely implicated (via association with oil) in arrhythmias in the developing hearts of tuna and amberjack (62) (see footnote 1).</p> <p>Among seabirds, dispersants with similar composition (Corexit 9500A and Finosol OSR) caused catastrophic loss of waterproofing with lethal effects similar to impacts from oil alone (63-64). Other impacts, such as eye damage in adults (65) and lower spleen weights in hatchlings from eggs treated with mixtures (66), were</p>

SDS statement, Complaint overview	Specific Complaint
<p>12.1. Ecotoxicity continued</p>	<p>greater with oil-dispersant mixtures compared to oil alone. A review recommended accounting for ecosystem harm from dispersants (67).</p> <p>In sea turtles, hatchlings from eggs treated with mixtures had increased harm (altered blood chemistry parameters and lack of weight gain) compared to oil alone (68), while oil-dispersant uptake was documented in juveniles and adults (69).</p> <p>Corexit dispersants were cytotoxic and genotoxic to sperm whale skin cells (70) and 9500A suppressed proliferation of white blood cell lymphocytes in bottlenose dolphins, making animals more susceptible to disease and poor health (71), consistent with field study findings of high-incidence of lung disease, low levels of cortisol, weight loss (72), failed pregnancies (73), slow recovery (74), population-level harm (74), and a decade of declining populations in the area impacted by the Deepwater Horizon oil disaster (75). Recent reviews found post-spill damage assessment of both nearshore and offshore, oceanic toothed cetaceans “vastly” underestimated the harm (76, 77).</p> <p>The ecological evidence strongly indicates this product:</p> <ul style="list-style-type: none"> – Is hazardous to the aquatic environment with long-lasting effects: H410/GHS09. <p><i>This product should be classified and labelled accordingly.</i></p>
<p>[12.2 v7] Persistence and degradability “The organic portion of this preparation is expected to be readily biodegradable.” MISLEADING, INCORRECT.</p>	<p>MISLEADING, INCORRECT: The statement reveals an inconvenient truth, i.e., while the <i>product</i> may break apart rapidly in the environment, the <i>ingredients</i> in the product may not. For example, in cold water tests, the “degradation half-life of DOSS increased from 4.1 days to >500 days” as Corexit 9500A levels approached expected field concentrations. Further, the expected DOSS hydrolysis product (EHSS) “showed limited degradation compared to the other surfactants” tested (DOSS, Tween 80 and Tween 85).⁸ A field study found the dispersant (measured in DOSS levels) “remained associated with oil in the environment and can persist for ~4 years.”⁹ Persistence in the environment should be determined based on a product or its ingredients, whichever is least degradable.</p>

⁸ Brakstad OG, et al. 2018. Biodegradation of oil spill dispersant surfactants in cold seawater. *Chemosphere*. Aug;204:290-293. doi: 10.1016/j.chemosphere.2018.04.051.

⁹ White HK, et al. 2014. Long-term persistence of dispersants following the Deepwater Horizon oil spill. *Environ Sci Technol Lett*. 1(7):295–299. DOI. See also Table 2 (19), DOSS persists with oil for at least 12-20 months.

Table 4. Non-Compliance Complaint for DASIC EcoSafe OSD Safety Data Sheet

Safety Data Sheet (SDS) Statement, Complaint Overview	Specific Complaint
<p>SDS subtitle “according to Federal Register / Vol. 77, No. 58 / ... March 26, 2012”: OUTDATED.</p>	<p>The Hazard Communication Standard (HCS) was updated in 89 FR 44144-44461, May 20, 2024, including Appendix D to § 1900.1200–SDSs (Mandatory). SDSs must provide “information that accurately reflects the scientific evidence...” [§ 1910.1200(g)(5)].</p>
<p>Sec. 2: Hazard(s) Identification 2.1. Classification of the substance or mixture “Skin corrosion/irritation Cat. 2, H315” INACCURATE (INCOMPLETE).</p> <p>Note: All classifications used in this document are from the UNECE GHS Classification (Rev. 10, 2023) Summar https://pubchem.ncbi.nlm.nih.gov/ghs/</p> <p>2.2. GHS Labeling elements, including precautionary statements Missing label elements: INACCURATE.</p> <p>2.3 Other hazards which do not result in classification “No additional information available.” INCORRECT (FALSE).</p> <p>Note: If there is no classification for a hazard <i>specific to this product</i> or any of its ingredients, but there is information available that shows a hazard(s) can be reasonably anticipated based on evidence for similar mixtures (i.e., products with the same key ingredients) that are used for a similar purpose as oil dispersants (see Table 1), then additional information is needed to communicate the known or expected health risk either in Sec. 2.3 Hazards not otherwise classified or in Sec. 2.5 Additional information.</p>	<p>Sec. 2. This section is INACCURATE as it is inconsistent with sections 3 and 4, and it is MISSING now required classifications and label elements based on the relevant human and ecological evidence for a similar product, Corexit 9500A, with the same key ingredients (petroleum distillates, DOSS, Span 80, Tween 80).</p> <p>2.1, 2.2. INACCURATE: The missing H-Codes and statements (and pictograms) for the hazards reported in Sec. 3 are H304, aspiration toxicity Cat. 1 for petroleum distillates hydrotreated light (GHS08), and H318, eye damage/irritation Cat. 1 (GHS05) for DOSS and, in Sec. 4, H332, acute toxicity inhalation Cat. 4 (GHS07). See also sections 11 and 12 for rationale to support the required classifications and labeling elements.</p> <p>2.3. INCORRECT (FALSE): Did not report relevant and available information – see itemized evidence in Table 2 below. <i>Throughout this document, bold ##</i> indicate publication at least 6 months prior to this SDS revision dated 6/19/2024.</p> <p>Skin/Respiratory sensitizer: 2, 3, 4 Carcinogen: 5, 6, 7, 8, 9 Reproductive toxin: 10 Target Organ Systemic Toxicity (TOST) for single (lab study) or repeated (epidemiology study) exposures</p> <ul style="list-style-type: none"> - Respiratory system: 1, 11, 12, 13, 14 - Skin (integumentary) system: 15, 16, 17, 18a-b, 18c-d, 19, 20a, 20b - Central/peripheral nervous systems: 1, 3 (eye); 21-24 - Cardiovascular system: 25, 26a-b, 27, 28a-b - Endocrine system: 29, 30, 31, 32 - Urinary system: 33, 34 <p>Further, available evidence from the Deepwater Horizon oil disaster shows oil-dispersant combined was more toxic than oil alone to aquatic life with long-lasting impacts from deep sea coral to seabirds and from bacteria and mesoplankton to sperm whales (see Sec. 12).</p>

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 4: First-aid measures.</p> <p>4.1. Description of first aid measures First-aid measures after inhalation: ... “Not expected to present a significant inhalation hazard under anticipated conditions of normal use.” MISLEADING, INACCURATE.</p> <p>Note: Employers must determine the source of all symptoms including common cold and flu-like symptoms, and, if any are work-related symptoms of chemical illness, the employer must accurately record and report the illnesses, consistent with an OSHA 2023 standard interpretation.¹</p> <p>4.2 Most important symptoms and effects (acute and delayed) Symptoms/effects after inhalation: “Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.” MISLEADING, INACCURATE.</p> <p>Symptoms/effects after skin contact: Irritation. irritation (itching, redness, blistering). INACCURATE.</p> <p>Symptoms/effects after eye contact: “Redness, itching, tears. May cause slight irritation.” INACCURATE.</p> <p>Note: A hazard class such as “irritant” or a hazard statement such as “causes serious eye damage” cannot be substituted for a symptom description. Symptoms must be described in common language, clear and understandable to downstream users, consistent with an OSHA 2010 standard interpretation.²</p>	<p>4.1. This product is specifically manufactured and marketed as an oil dispersant. Therefore, “normal use” is use during an oil spill response. Since the product is designed to be sprayed into the environment and combine with oil, it is reasonable to expect, based on human experience with Corexit 9500A, that “normal use” could pose a significant inhalation hazard to exposed oil spill workers and the exposed public, not only those who physically handle the product. Statement also contradicts inhalation hazard statement in Sec. 4.2.</p> <p>4.2. Evidence in Table 2 of human experience and studies with a similar product with the same key ingredients (Corexit 9500A) applies as “appropriate data.” Symptoms described in itemized evidence are followed by references in the hazard communication standard Appendix A to similar descriptions, indicating this information must be communicated in the SDS.</p> <p>Inhalation symptoms: Expect acute symptoms such as shortness of breath, difficulty breathing, wheezing, coughing, and burning in the nose, throat, and lungs (12–14; A.4, A.8.2.2.1), and neurological symptoms such as severe headaches or migraines, nausea or vomiting, dizziness or vertigo, irritability, fatigue, or sleepiness (23, 24; A.8.2.2.2).</p> <p>Skin contact symptoms: Expect symptoms such as itching, redness, inflammation, blistering, rashes, lesions, acne, alopecia (hair loss), and fatigue (3, 16–19, 20a, 20b; A.2, A.4). Skin contact may also be associated with respiratory symptoms (17).</p> <p>Eye contact symptoms: Expect symptoms such as redness, itchiness, tears, burning, blurred vision (1, 3, 12, 23; § 1910.1200 Table A.3.2) for irritation and conjunctivitis for damage.</p>

¹ OSHA, 2023. Standard interpretation: Clarification on the work-related exception in 1904.5(b)(2)(viii) for the common cold or flu. 1904.5(b)(2)(viii). **11/15/2023**.

² OSHA, 2010. Standard interpretation: OSHA Training standards policy statement. Involving 1910.123(k), 1910.147(c), 1910.1030(g), 19101200(h), 1926.21. **4/28/2010**.

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 4.2. Most important symptoms continued NO delayed symptoms/effects were reported: MISLEADING, INACCURATE.</p> <p>See note in Sec. 2.3.</p>	<p>Delayed symptoms/effects: Expect symptoms such as respiratory/skin sensitization (asthma-like symptom) (3, 4; A.4.2.1.2.1) and chronic rashes (18c, 18d); chronic coughing, sinusitis, COPD, dyspnea, respiratory abnormalities and fatigue (1, 12-14, 17); skin abnormalities, hair loss (16, 18a-b, 18c-d, 19, 20a, 20b); chronic brain damage with loss of function and memory (20b, 21-24), altered behavior, increased sensitivities to sound, light, odors (18c); long-term endocrine and hormonal disorders with increased risk of obesity or abnormal weight gain, type 2 diabetes (32), heart attacks and fatal coronary heart disease (25-28).</p> <p>Lab studies support the delayed or chronic effects (2, 15, 21, 22, 29, 30, 31) and provide evidence of kidney and liver dysfunction (33-34); increased risk of cancers (5-9); multi-generational harm as a reproductive toxin that may damage an unborn child (10).</p>
<p>4.3. Immediate medical attention and special treatment, if necessary. “Treat symptomatically”: DANGEROUSLY MISLEADING, INCORRECT, OUTDATED.</p> <p>See note in Sec. 4.1.</p>	<p>Treatment requires a systemic, not symptomatic, approach. Since 2012, § 1910.1200 A.4.1. has described a process of respiratory/skin sensitization that is <i>independent</i> of dose, i.e., there is no safe level. The mechanism was published in 2021.³ If symptoms persist or repeat, a specialty physician trained in occupational and environmental medicine should treat the worker to minimize long-term harm. <i>This is critical information that must be communicated in the SDS.</i></p>
<p>Sec. 6. Accidental release measures 6.2. Environmental precautions “Avoid release to the environment.” Sec. 8. Exposure controls In 8.2. Environmental exposure controls: “Avoid release to the environment.” MISLEADING, INACCURATE.</p>	<p>6.2, 8.2. MISLEADING, INACCURATE: Since “normal use” involves release of this product into the environment during oil spill response, then the SDS must communicate the expected environmental hazards from releasing the product into the environment based on experience with similar products used for this purpose. Expected exposure controls might include, for example, air monitoring and worker health monitoring.</p>
<p>Sec. 11: Toxicological Information Missing respiratory irritation: INCORRECT. Skin corrosion/irritation: “Causes skin irritation.” MISLEADING.</p>	<p>INCORRECT: Since product is “expected to be an inhalation hazard,” this must be clearly communicated, e.g., Respiratory irritation: Harmful if inhaled, causes difficulty breathing and delayed and chronic effects.</p> <p>MISLEADING: As previously noted, a hazard class or hazard statement such as “irritation” cannot be substituted for a symptom description (see note in Sec. 4.2. and symptom descriptions in Sec. 4.)</p>

³ Masri S, et al. 2021. Toxicant-induced loss of tolerance for chemicals, foods, and drugs: Assessing patterns of exposure behind a global phenomenon. *Environ Sci Eur* 33:65. DOI; Miller CS, et al. 2021. Mast cell activation may explain many cases of chemical intolerance. *Environ Sci Eur* 33, 129. DOI; see also Hoffman TILT Program online. University of Texas Health–San Antonio. <https://tiltresearch.org/>

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 11: Toxicological Information continued</p> <p>Serious eye damage/irritation: “Not classified...; May cause slight irritation to eyes.” MISLEADING, INCORRECT.</p> <p>– Respiratory or skin sensitization: “Not classified.”</p> <p>– Carcinogenicity: “Not classified.”</p> <p>– Reproductive toxicity: “Not classified.”</p> <p>– STOT-repeated exposure: “Not classified.”</p> <p>Set of four hazard statements: MISLEADING, INACCURATE, INCORRECT.</p>	<p>INCORRECT: The description for eyes is not consistent with the classification of H318/GHS05 for DOSS in Sec. 3.2 and the evidence of harm.</p> <p>MISLEADING, INACCURATE, INCORRECT: While this <i>product</i> may not be classified for the set of four hazards based on traditional toxicity tests, the available evidence from human experience and modern rapid toxicity or exposure assays⁴ on common ingredients in a similar product, Corexit 9500A, used for a similar purpose as an oil dispersant, strongly indicate that normal use of this product can be expected to cause multiple health issues and that the magnitude of harm will be consistently greater from oil-dispersant exposures than from oil alone.</p> <p>For example, the human experience for on-site field response workers who were exposed to oil and dispersant via inhalation was significantly associated with acute symptoms and long-term harm to the respiratory system (1, 3, 4, 12-14, 19), neurological system (23, 24), and cardiovascular system (25-28). Lab studies supported the human experience with findings that exposure to oil-dispersant mixtures altered membrane permeability of human bronchial epithelial cells and the blood brain barrier (11, 21) and triggered multiple cancer pathways in human bronchial epithelial cells (5, 6, 7, 8) and mice models (9).</p> <p>The human experience for on-site field response workers who were exposed to oil and dispersant via skin contact was also significantly associated with acute symptoms and long-term harm to the integumentary system (16, 17, 18a-c, 18d, 19, 20b), neurological system (23, 24), and cardiovascular system (27, 28a, 28b). Further, dispersants enhanced uptake of oil across the skin (19), moving oil and dispersant into the blood (25-27).</p> <p>Once in the blood (via skin contact or inhalation), the chemical mixture DOSS, alone (30, 31) or in combination with Span 80 or Tween 80 (29) in humans and mice, acts on receptor proteins in the endocrine system in ways that increase the obesogenic potential of this product (Corexit dispersant) and can cause end organ damage (as found in both epidemiology studies) such as obesity, lipid metabolic disorders, and increased risk of high cholesterol, heart attack, stroke, and type 2 diabetes (27-28, 32).</p> <p>The human experience with inhalation and skin contact is well supported by lab studies that found dispersant use greatly increased aerosolization of surface oil slick (see</p>

⁴ Ginesberg GL, et al. **2019**. Commentary: New toxicology tools and the emerging paradigm shift in environmental health decision-making. *Env Health Persp* 127(12):125002. doi.org/10.1289/EHP4745

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 11. Toxicological information continued</p> <p>Aspiration hazard: Not classified. MISLEADING, INACCURATE. (See sections 2.1, 2.2.)</p> <p>Symptoms/effects after inhalation, skin contact, eye contact, and ingestion: Sec. 11 repeats verbatim the information provided in Sec. 4.2. MISLEADING, INACCURATE (as previously discussed in Sec. 4.2).</p>	<p>20a footnotes) and field studies that found the dominate fate of surface oil was secondary organic aerosols that were transported at least 80 miles inland.⁵</p> <p>This human evidence strongly indicates that this product:</p> <ul style="list-style-type: none"> – May cause skin corrosion/irritation: H315/GHS07 – May cause an allergic skin reaction (sensitization): H317/GHS07 – May cause serious eye damage/irritation: H318/GHS05 – Is harmful if inhaled: H332/GHS07 – May cause allergy or asthma symptoms or breathing difficulties if inhaled: H334/GHS08; – May cause cancer: H350/GHS08 – May cause cancer by inhalation: H350i/GHS08 – May damage the unborn child: H360D/GHS08 – May cause damage to organs through prolonged or repeated exposure: H373/GHS08. <p><i>This product should be labeled and classified accordingly.</i></p>
<p>Sec. 12: Ecological information 12.1. Toxicity</p> <p>Ecology – general: “The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.” MISLEADING, INACCURATE, INCORRECT.</p>	<p>12.1. MISLEADING, INACCURATE, INCORRECT: Ecological experience with Corexit 9500A and certain ingredients identical to those in this product consistently found that exposure to oil-dispersant mixtures caused greater harm than exposure to oil alone to sea life across species.</p> <p>For example, oil-dispersant mixtures were more toxic than oil alone: to oil-eating bacteria, slowing overall biodegradation of oil (51); to microzooplankton rotifers (52) and ciliates, disrupting predator-prey controls and triggering red tide blooms that are harmful to humans and marine life (53, 54); and to deep-sea corals via endosymbiont partners that provide nutrition (55) and vital services to their coral hosts (56, 57).</p> <p>Dispersant Corexit 9500A altered the permeability of gill membranes in oysters (58), blue crabs (59), and two species of forage fish (59, 60), disrupting osmoregulation and impairing survival, likely facilitated by anionic surfactants (DOSS) (60). The dispersant also altered immune function in oysters and gene expression pathways relating to immunity, blood, and circulation processes in a third species of forage fish (61) and is likely implicated (via association with oil) in arrhythmias in the developing hearts of tuna and amberjack (62) (see footnote 1).</p>

⁵ Ward CP, et al. et al. **2018**. Partial photochemical oxidation was a dominant fate of *Deepwater Horizon* surface oil. *Environ Sci Technol.* 52:1797–1805. DOI; Middlebrook AM, et al. **2012**. Air quality implications of the Deepwater Horizon oil spill. *Proc Nat Acad Sci. Phys Sci*, 109:20280–5. DOI.

SDS statement, Complaint overview	Specific Complaint
<p>12.1. Toxicity continued</p>	<p>Among seabirds, dispersants with similar composition (Corexit 9500A and Finosol OSR) caused catastrophic loss of waterproofing with lethal effects similar to impacts from oil alone (63-64). Other impacts, such as eye damage in adults (65) and lower spleen weights in hatchlings from eggs treated with mixtures (66), were greater with oil-dispersant mixtures compared to oil alone. A review recommended accounting for ecosystem harm from dispersants (67).</p> <p>In sea turtles, hatchlings from eggs treated with mixtures had increased harm (altered blood chemistry parameters and lack of weight gain) compared to oil alone (68), while oil-dispersant uptake was documented in juveniles and adults (69).</p> <p>Corexit dispersants were cytotoxic and genotoxic to sperm whale skin cells (70) and 9500A suppressed proliferation of white blood cell lymphocytes in bottlenose dolphins, making animals more susceptible to disease and poor health (71), consistent with field study findings of high-incidence of lung disease, low levels of cortisol, weight loss (72), failed pregnancies (73), slow recovery (74), population-level harm (74), and a decade of declining populations in the area impacted by the Deepwater Horizon oil disaster (75). Recent reviews found post-spill damage assessment of both nearshore and offshore, oceanic toothed cetaceans “vastly” underestimated the harm (76, 77).</p> <p>The ecological evidence strongly indicates this product:</p> <ul style="list-style-type: none"> – Is hazardous to the aquatic environment with long-lasting effects: H410/GHS09. <p><i>This product should be classified and labelled accordingly.</i></p>
<p>12.2. Persistence and degradability</p> <ul style="list-style-type: none"> – Dasic EcoSafe OSD: “Expected to be biodegradable” – DOSS: “Not rapidly degradable” – Distillates (petroleum), hydro-treated light: “Not rapidly degradable” <p>Set of three statements: MISLEADING, INCORRECT.</p>	<p>MISLEADING, INCORRECT: The set of three statements reveal an inconvenient truth, i.e., while the <i>product</i> may break apart rapidly in the environment, the <i>ingredients</i> in the product may not. For example, in cold water tests, the “degradation half-life of DOSS increased from 4.1 days to >500 days” as Corexit 9500A levels approached expected field levels and a DOSS hydrolysis product “showed limited degradation compared to the other surfactants” tested.⁶ Field studies found DOSS can persist with oil for ~4 years in the environment.⁷ Persistence in the environment should be determined based on a product or its ingredients, whichever is least degradable.</p>

⁶ Brakstad OG, et al. **2018**. Biodegradation of oil spill dispersant surfactants in cold seawater. *Chemosphere*. Aug;204:290-293. doi: [10.1016/j.chemosphere.2018.04.051](https://doi.org/10.1016/j.chemosphere.2018.04.051).

⁷ White HK, et al. **2014**. Long-term persistence of dispersants following the Deepwater Horizon oil spill. *Environ Sci Technol Lett*. 1(7):295–299. [DOI](#). See also Table 2 (19), demonstrating persistence for at least 12-20 months.

Table 5. Non-Compliance Complaint for Finasol OSR 52 IBC Safety Data Sheet

Safety Data Sheet (SDS) Statement: Complaint Overview	Specific Complaint
<p>SDS subtitle “According to Regulations 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200 ”: OUTDATED.</p>	<p>The Hazard Communication Standard (HCS) was updated in 89 FR 44144-44461, May 20, 2024, including Appendix D to § 1900.1200–SDSs (Mandatory). SDSs must provide “information that accurately reflects the scientific evidence...” [§ 1910.1200(g)(5)].</p>
<p>Sec. 2: Hazards Identification</p> <p>2.1. Classification of the substance or mixture, Classification (GHS-US) “Skin corrosion/irritation Cat. 2” “Serious eye damage/eye irritation, Cat. 1: INACCURATE (INCOMPLETE).</p> <p>2.2. Label elements Missing required pictogram for H315 designation, Skin corrosion/irritant: INACCURATE.</p> <p>2.5. Additional information “No additional information available”: INCORRECT (FALSE).</p> <p>Note: If there is no classification for a hazard <i>specific to this product</i> and a hazard(s) can be reasonably anticipated based on tests or human experience with similar mixtures (products with shared ingredients as identified in Table 1), then additional information is needed to communicate the known or anticipated health risk either in Sec. 2.3 Hazards not otherwise classified or in Sec. 2.5 Additional information.</p>	<p>Sec. 2. This section is INACCURATE as it is inconsistent with Sec. 3 and MISSING now required classifications and label elements based on Sec. 3 and the relevant human and ecological evidence for a similar product, Corexit 9500A, with the same key ingredients (petroleum distillates, DOSS, Span 80, Tween 80). See Sec. 11 and 12 for required classifications and labeling elements.</p> <p>2.1, 2.2. INACCURATE: The missing H-Codes and statements for the hazards reported in Sec. 2 are H315, skin corrosion/ irritation Cat. 1, and H319, eye damage/irritation Cat. 2A. Pictogram GHS07 Exclamation Mark Irritant for hazard class H315 is also missing. See also Sec. 3 for other required hazard identification.</p> <p>2.3. INCORRECT (FALSE): Did not report relevant and available information – see itemized evidence in Table 2 below. Throughout this document, bold ## indicate publication at least 6 months prior to this SDS revision dated 5/28/2024.</p> <p>Skin/Respiratory sensitizer: 2, 3, 4 Carcinogen: 5, 6, 7, 8, 9 Reproductive toxin: 10 Target Organ Systemic Toxicity (TOST) for single (lab study) or repeated (epidemiology study) exposures</p> <ul style="list-style-type: none"> - Respiratory system: 1, 11, 12, 13, 14 - Skin (integumentary) system: 15, 16, 17, 18a-b, 18c-d, 19, 20a, 20b - Central/peripheral nervous systems: 1, 3 (eye); 21-24 - Cardiovascular system: 25, 26a-b, 27, 28a-b - Endocrine system: 29, 30, 31, 32 - Urinary system: 33, 34 <p>Further, available evidence from the Deepwater Horizon oil disaster shows oil-dispersant combined was more toxic than oil alone to aquatic life with long-lasting impacts from deep sea coral to seabirds and from bacteria and mesoplankton to sperm whales (see Sec. 12).</p>

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 3: Composition/information on ingredients, 3.2. Mixtures. Missing now required H-Codes for hazardous ingredients: INACCURATE.</p>	<p>MISSING. Petroleum distillates, hydrotreated light: H304, aspiration toxicity Cat. 1. MISSING. DOSS: H315, skin irritant Cat. 2; H318, eye damage Cat. 1.</p>
<p>Sec. 4: First-aid measures. 4.2 Most important symptoms and effects, both acute and delayed Missing symptoms/effects after inhalation: DANGEROUSLY MISLEADING, INCORRECT.</p> <p>Note: Employers must determine the source of all symptoms including common cold and flu-like symptoms, and, if any are work-related symptoms of chemical illness, the employer must accurately record and report the illnesses, consistent with an OSHA 2023 standard interpretation.¹</p> <p>Symptoms/effects after skin contact: “Causes skin irritation...” INACCURATE.</p> <p>Symptoms/effects after eye contact: “Causes serious eye damage.” INACCURATE.</p> <p>Note: A hazard class like “irritant” or a hazard statement like “causes serious eye damage” cannot be substituted for a symptom description. Symptoms must be described in common language, clear and understandable to downstream users, consistent with an OSHA 2010 standard interpretation.²</p> <p>NO delayed symptoms/effects were reported. MISLEADING, INCORRECT.</p>	<p>Sec. 4. This section is INACCURATE on symptom descriptions and MISLEADING, INCORRECT on not reporting available, relevant studies for a similar product, Corexit 9500A, used for a similar purpose as an oil dispersant. Symptoms described in itemized evidence are followed by references in the hazard communication standard Appendix A to similar descriptions, indicating that this information must be communicated in the SDS.</p> <p>4.2. Inhalation symptoms: Expect acute symptoms such as shortness of breath, difficulty breathing, wheezing, coughing, and burning in the nose, throat, and lungs (12–14; A.4, A.8.2.2.1), and neurological symptoms such as severe headaches or migraines, nausea or vomiting, dizziness or vertigo, irritability, fatigue, or sleepiness (23, 24; A.8.2.2.2).</p> <p>Skin contact symptoms: Expect symptoms such as itching, redness, inflammation, blistering, rashes, lesions, acne, alopecia (hair loss), and fatigue (3, 16–19, 20a, 20b; A.2, A.4). Skin contact may also be associated with respiratory symptoms (17).</p> <p>Eye contact symptoms: Expect symptoms such as redness, itchiness, tears, burning, blurred vision (1, 3, 12, 23; Table A.3.2) for irritation and conjunctivitis for damage.</p> <p>Delayed symptoms/effects: Expect symptoms such as respiratory/skin sensitization (asthma-like symptom) (3, 4; A.4.2.1.2.1) and chronic rashes (18c, 18d); chronic coughing, sinusitis, COPD, dyspnea, respiratory abnormalities and fatigue (1, 12–14, 17); skin abnormalities, hair loss (16, 18a–b, 18c–d, 19, 20a, 20b); chronic brain damage with loss of function and memory (20b, 21–24), altered behavior, increased sensitivities to sound, light, odors (18c); long-term endocrine and hormonal disorders with increased risk of obesity or abnormal weight gain, type 2 diabetes (32), heart attacks and fatal coronary heart disease (25–28)... continued.</p>

¹ OSHA, 2023. Standard interpretation: Clarification on the work-related exception in 1904.5(b)(2)(viii) for the common cold or flu. 1904.5(b)(2)(viii). **11/15/2023**.

² OSHA, 2010. Standard interpretation: OSHA Training standards policy statement. Involving 1910.123(k), 1910.147(c), 1910.1030(g), 19101200(h), 1926.21. **4/28/2010**.

SDS statement, Complaint overview	Specific Complaint
<p>4.2. Most important symptoms continued</p>	<p>Lab studies support the delayed or chronic effects (2, 15, 21, 22, 29, 30, 31) and provide evidence of kidney and liver dysfunction (33-34); increased risk of cancers (5-9); multi-generational harm as a reproductive toxin that may damage an unborn child (10).</p>
<p>4.3. Indication of any immediate medical attention and special treatment needed. “Treat symptomatically”: DANGEROUSLY MISLEADING, INCORRECT, OUTDATED.</p>	<p>Treatment requires a systemic, not symptomatic, approach. Since 2012, § 1910.1200 A.4.1. has described a process of respiratory/skin sensitization that is <i>independent</i> of dose, i.e., there is no safe level. The mechanism was published in 2021.³ If symptoms persist or repeat, a specialty physician trained in occupational and environmental medicine should treat the worker to minimize long-term harm. <i>This is critical information that must be communicated in the SDS.</i></p>
<p>Sec. 11: Toxicological Information Sec. 11.1. Information on toxicological effects Missing respiratory irritation: INCORRECT.</p> <p>Skin corrosion/irritation: “Causes skin irritation.” MISLEADING.</p> <p>Serious eye damage/irritation: “Causes serious eye damage.” MISLEADING.</p> <p>Respiratory or skin sensitization: “Not classified.”</p> <p>Carcinogenicity: “Not classified.”</p> <p>Reproductive toxicity: “Not classified.”</p> <p>STOT-repeated exposure: “Not classified.”</p> <p>Set of 4 hazard statements: MISLEADING, INACCURATE, INCORRECT.</p>	<p>Respiratory: Based on evidence from a product with similar ingredients and purpose, this product is expected to be an inhalation hazard. This must be communicated, e.g., Respiratory irritation: Harmful if inhaled, causes difficulty breathing and delayed and chronic effects.</p> <p>Skin, eye. MISLEADING: As previously noted, a hazard class or statement cannot be substituted for a symptom description and must be described in common language, consistent with an OSHA 2010 standard interpretation and descriptions in the hazard communication standard Appendix A (see examples in Sec. 4 specific complaint).</p> <p>MISLEADING, INACCURATE, INCORRECT: While this <i>product</i> may not be classified for the set of four hazards based on traditional toxicity tests, the available evidence from human experience and modern rapid toxicity or exposure assays⁴ on common ingredients in a similar product, Corexit 9500A, used for a similar purpose as an oil dispersant, strongly indicate that normal use of this product can be expected to cause multiple health issues and that the magnitude of harm will be consistently greater from oil-dispersant exposures than from oil alone.</p> <p>For example, the human experience for on-site field response workers who were exposed to oil and dispersant via inhalation was significantly associated with acute symptoms and long-term harm to the respiratory system (1, 3, 4, 12-14, 19), neurological system (23, 24), and</p>

³ Masri S, et al. **2021**. Toxicant-induced loss of tolerance for chemicals, foods, and drugs: Assessing patterns of exposure behind a global phenomenon. *Environ Sci Eur* 33:65. [DOI](#); Miller CS, et al. **2021**. Mast cell activation may explain many cases of chemical intolerance. *Environ Sci Eur* 33, 129. [DOI](#); see also Hoffman TILT Program online. University of Texas Health–San Antonio. <https://tiltresearch.org/>

⁴ Ginesberg GL, et al. **2019**. Commentary: New toxicology tools and the emerging paradigm shift in environmental health decision-making. *Env Health Persp* 127(12):125002. doi.org/10.1289/EHP4745

SDS statement, Complaint overview	Specific Complaint
<p data-bbox="201 245 659 321">Sec. 11: Toxicological Information continued</p> <p data-bbox="201 1314 626 1419">Aspiration hazard: Not classified. MISLEADING, INACCURATE (See Sec. 3.)</p> <p data-bbox="201 1461 550 1566">Missing Symptoms/effects: MISLEADING, INACCURATE (See Sec. 4.2.)</p>	<p data-bbox="699 245 1421 451">cardiovascular system (25-28). Lab studies supported the human experience with findings that exposure to oil-dispersant mixtures altered membrane permeability of human bronchial epithelial cells and the blood brain barrier (11, 21) and triggered multiple cancer pathways in human bronchial epithelial cells (5, 6, 7, 8) and mice models (9).</p> <p data-bbox="699 459 1421 737">The human experience for on-site field response workers who were exposed to oil and dispersant via skin contact was also significantly associated with acute symptoms and long-term harm to the integumentary system (16, 17, 18a-c, 18d, 19, 20b), neurological system (23, 24), and cardiovascular system (27, 28a, 28b). Further, dispersants enhanced uptake of oil across the skin (19), moving oil and dispersant into the blood (25-27).</p> <p data-bbox="699 745 1421 1056">Once in the blood (via skin contact or inhalation), the chemical mixture DOSS, alone (30, 31) or in combination with Span 80 or Tween 80 (29) in humans and mice, acts on receptor proteins in the endocrine system in ways that increase the obesogenic potential of this product (Corexit dispersant) and can cause end organ damage (as found in both epidemiology studies) such as obesity, lipid metabolic disorders, and increased risk of high cholesterol, heart attack, stroke, and type 2 diabetes (27-28, 32).</p> <p data-bbox="699 1064 1421 1270">The human experience with inhalation and skin contact is well supported by lab studies that found dispersant use greatly increased aerosolization of surface oil slick (see 20a footnotes) and field studies that found the dominate fate of surface oil was secondary organic aerosols that were transported at least 80 miles inland.⁵</p> <p data-bbox="699 1278 1421 1312">This human evidence strongly indicates that this product:</p> <ul data-bbox="699 1320 1421 1753" style="list-style-type: none"> - May cause skin corrosion/irritation: H315/GHS07 - May cause an allergic skin reaction (sensitization): H317/GHS07 - May cause serious eye damage/irritation: H318/GHS05 - Is harmful if inhaled: H332/GHS07 - May cause allergy or asthma symptoms or breathing difficulties if inhaled: H334/GHS08; - May cause cancer: H350/GHS08 - May cause cancer by inhalation: H350i/GHS08 - May damage the unborn child: H360D/GHS08 - May cause damage to organs through prolonged or repeated exposure: H373/GHS08. <p data-bbox="699 1761 1421 1791"><i>This product should be labeled and classified accordingly.</i></p>

⁵ Ward CP, et al. et al. **2018**. Partial photochemical oxidation was a dominant fate of *Deepwater Horizon* surface oil. *Environ Sci Technol.* 52:1797–1805. DOI; Middlebrook AM, et al. **2012**. Air quality implications of the Deepwater Horizon oil spill. *Proc Nat Acad Sci. Phys Sci*, 109:20280–5. DOI.

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 12: Ecological information</p> <p>12.1. Toxicity</p> <p>Ecology – general: “The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.”</p> <p>MISLEADING, INACCURATE, INCORRECT.</p>	<p>MISLEADING, INACCURATE, INCORRECT: Since normal use involves release of this product into the environment during oil spill response, then the SDS must communicate the expected environmental hazards from releasing the product into the environment based on experience with similar products used for this purpose.</p> <p>Ecological experience with Corexit 9500A and certain ingredients identical to those in this product consistently found that exposure to oil-dispersant mixtures caused greater harm than exposure to oil alone to sea life across species.</p> <p>For example, oil-dispersant mixtures were more toxic than oil alone: to oil-eating bacteria, slowing overall biodegradation of oil (51); to microzooplankton rotifers (52) and ciliates, disrupting predator-prey controls and triggering red tide blooms that are harmful to humans and marine life (53, 54); and to deep-sea corals via endosymbiont partners that provide nutrition (55) and vital services to their coral hosts (56, 57).</p> <p>Dispersant Corexit 9500A altered the permeability of gill membranes in oysters (58), blue crabs (59), and two species of forage fish (59, 60), disrupting osmoregulation and impairing survival, likely facilitated by anionic surfactants (DOSS) (60). The dispersant also altered immune function in oysters and gene expression pathways relating to immunity, blood, and circulation processes in a third species of forage fish (61) and is likely implicated (via association with oil) in arrhythmias in the developing hearts of tuna and amberjack (62) (see footnote 1).</p> <p>Among seabirds, dispersants with similar composition (Corexit 9500A and Finasol OSR) caused catastrophic loss of waterproofing with lethal effects similar to impacts from oil alone (63-64). Other impacts, such as eye damage in adults (65) and lower spleen weights in hatchlings from eggs treated with mixtures (66), were greater with oil-dispersant mixtures compared to oil alone. A review recommended accounting for ecosystem harm from dispersants (67).</p> <p>In sea turtles, hatchlings from eggs treated with mixtures had increased harm (altered blood chemistry parameters and lack of weight gain) compared to oil alone (68), while oil-dispersant uptake was documented in juveniles and adults (69).</p>

SDS statement, Complaint overview	Specific Complaint
<p>12.1. Toxicity continued</p>	<p>Corexit dispersants were cytotoxic and genotoxic to sperm whale skin cells (70) and 9500A suppressed proliferation of white blood cell lymphocytes in bottlenose dolphins, making animals more susceptible to disease and poor health (71), consistent with field study findings of high-incidence of lung disease, low levels of cortisol, weight loss (72), failed pregnancies (73), slow recovery (74), population-level harm (74), and a decade of declining populations in the area impacted by the Deepwater Horizon oil disaster (75). Recent reviews found post-spill damage assessment of both nearshore and offshore, oceanic toothed cetaceans “vastly” underestimated the harm (76, 77).</p> <p>The ecological evidence strongly indicates this product:</p> <ul style="list-style-type: none"> – Is hazardous to the aquatic environment with long-lasting effects: H410/GHS09. <p><i>This product should be classified and labelled accordingly.</i></p>
<p>12.2. Persistence and degradability DOSS: “Not readily biodegradable.” CORRECT.</p> <p>Petroleum distillates, hydrotreated light: “Readily biodegradable.” MISLEADING, INCORRECT.</p>	<p>CORRECT: This SDS was updated to reflect evidence that DOSS is, in fact, not readily biodegradable and is known to remain associated with oil and persist for ~4 years in the environment,⁶ as supported by lab tests using field concentrations present during the BP Deepwater Horizon oil disaster.⁷</p> <p>MISLEADING, INCORRECT: The petroleum distillate statement seems to hinge on “readily” like the Corexit 9500A SDS. The Dasic EcoSafe SDS reports the same mixture as “not rapidly” degradable. An EHS Support sheet explains that based on “the known properties of hydrocarbons in the range C9 to C16, kerosines are often considered not readily biodegradable; but as they can be degraded by microorganisms, they are regarded as being inherently biodegradable.”⁸</p> <p>Persistence in the environment should be determined based on a product or its ingredients, whichever is least degradable.</p>

⁶ White HK, et al. 2014. Long-term persistence of dispersants following the Deepwater Horizon oil spill. *Environ Sci Technol Lett.* 1(7):295–299. DOI. See also Table 2 (19), DOSS persists with oil for at least 12-20 months.

⁷ Brakstad OG, et al. 2018. Biodegradation of oil spill dispersant surfactants in cold seawater. *Chemosphere.* Aug;204:290-293. doi: 10.1016/j.chemosphere.2018.04.051.

⁸ EHS Support. Revised March 2021. Hydrotreated light petroleum distillate, at 3. <https://www.santos.com/wp-content/uploads/2021/04/Hydrotreated-petroleum-distillates-March-2021.pdf>

Table 6. Non-Compliance Complaint for Accell Clean DWD 2.0 Safety Data Sheet

Section and Safety Data Sheet (SDS) Statement: Complaint Overview	Specific Complaint
<p>SDS subtitle “Version: 7/ EN ”: CURRENT.</p>	<p>Of note: This is the only SDS in this complaint that was updated to comply with the globally harmonized system of hazard communication revision 7 [89 FR 44144-44461, May 20, 2024, including Appendix D to § 1900.1200–SDSs (Mandatory)].</p>
<p>Sec. 2: Hazards Identification 2.1. Classification of the substance or mixture INACCURATE (INCOMPLETE). 2.2. Label elements Missing required pictograms for H315 designation, Skin corrosion/irritation, Category 2: INACCURATE. Missing H-statement for the H401 designation: MISLEADING, INACCURATE. Note: All classifications used in this document are from the UNECE GHS Classification (Rev. 10, 2023) Summar https://pubchem.ncbi.nlm.nih.gov/ghs/ 2.3 Other hazards which do not result in classification NONE reported: INACCURATE. Note: If there is no classification for a hazard <i>specific to this product</i> or any of its ingredients, but there is information available that shows a hazard(s) can be reasonably anticipated based on evidence for similar mixtures (i.e., products with the same key ingredients) that are used for a similar purpose as oil dispersants (see Table 1), then additional information is needed to communicate the known or expected health risk either in Sec. 2.3 Hazards not otherwise classified or in Sec. 2.5 Additional information.</p>	<p>2.1, 2.2. INACCURATE (INCOMPLETE). Missing classifications of hazard identification based on sections 3 and 11 of this SDS and relevant human and ecological evidence for a similar mixture (Corexit 9500A) with the same key ingredients (DOSS, Span 80, Tween 80) that is used for a similar purpose as an oil dispersant. MISSING, MISLEADING: For items reported in Sec. 2, the required pictogram GHS07 for hazard class H315 is missing, as is the H-statement “Toxic to aquatic life” that corresponds to the H401 classification. Instead, the H-statement “Harmful to aquatic life” (for H402) is reported. MISSING, MISLEADING: For items reported in Sec. 3, the missing classifications and labels should include H361d Reproductive toxicity and pictogram GHS08. See Sec. 11 and 12 for other required classifications and labeling elements, based on evidence below from Table 2. 2.3. INACCURATE: Did not report available information – see itemized evidence in Table 2 below. <i>Throughout this document, bold ##</i> indicate publication at least 6 months prior to this SDS revision dated 8/7/2024. Skin/Respiratory sensitizer: 2, 3, 4 Carcinogen: 5, 6, 7, 8, 9 Reproductive toxin: 10 Target Organ Systemic Toxicity (TOST) for single (lab study) or repeated (epidemiology study) exposures - Respiratory system: 1, 11, 12, 13, 14 - Skin (integumentary) system: 15, 16, 17, 18a-b, 18c-d, 19, 20a, 20b - Central/peripheral nervous systems: 1, 3 (eye); 21-24 - Cardiovascular system: 25, 26a-b, 27, 28a-b - Endocrine system: 29, 30, 31, 32 - Urinary system: 33, 34 Further, available evidence from the Deepwater Horizon oil disaster shows oil-dispersant combined was more toxic than oil alone to aquatic life with long-lasting impacts from deep sea coral to seabirds and from bacteria and mesoplankton to sperm whales (see Sec. 12).</p>

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 4: First-aid measures.</p> <p>4.2. Most important symptoms and effects, both delayed and acute</p> <p>Inhalation: “No specific data.” MISLEADING, INACCURATE.</p> <p>Note: Employers must determine the source of all symptoms including common cold and flu-like symptoms, and, if any are work-related symptoms of chemical illness, the employer must accurately record and report the illnesses, consistent with an OSHA 2023 standard interpretation.¹</p> <p>Eye contact: “Pain, local redness, swelling.” INACCURATE.</p> <p>Skin contact: “Redness, itching, swelling.” INACCURATE.</p> <p>Note: A hazard class like “irritant” or a hazard statement like “causes serious eye damage” cannot be substituted for a symptom description. Symptoms must be described in common language, clear and understandable to downstream users, consistent with an OSHA 2010 standard interpretation.²</p> <p>NO delayed symptoms/effects were reported: MISLEADING, INACCURATE.</p>	<p>4.2 MISLEADING, INACCURATE. Evidence in Table 2 from tests on shared ingredients and from human experience with a similar mixture (Corexit 9500A) applies as relevant “specific” data. Symptoms described in itemized evidence below are followed by references in the hazard communication standard Appendix A to similar descriptions, indicating that this information must be communicated in the SDS.</p> <p>Inhalation symptoms: This product is specifically manufactured and marketed as an oil dispersant that is designed to be sprayed into the environment and combine with oil. It is reasonable to expect that such use could pose a significant inhalation hazard to exposed oil spill workers and the exposed public, not only those who physically handle the product (see Sec 11, route).</p> <p>Based on human experience with Corexit 9500A, expect acute symptoms such as shortness of breath, difficulty breathing, wheezing, coughing, and burning in the nose, throat, and lungs (12–14; A.4, A.8.2.2.1), and neurological symptoms such as severe headaches or migraines, nausea or vomiting, dizziness or vertigo, irritability, fatigue, or sleepiness (23, 24; A.8.2.2.2).</p> <p>Eye contact symptoms: Expect symptoms such as redness, itchiness, tears, burning, blurred vision (1, 3, 12, 23; § 1900.1200 Table A.3.2) for irritation and conjunctivitis for damage.</p> <p>Skin contact symptoms: Expected skin symptoms include itching, redness, inflammation, blistering, rashes, lesions, acne, alopecia (hair loss), and fatigue (3, 16–19, 20a, 20b; A.2, A.4). Skin contact may also be associated with respiratory symptoms (17).</p> <p>Delayed symptoms/effects: Expect symptoms such as respiratory/skin sensitization (asthma-like symptom) (3, 4; A.4.2.1.2.1) and chronic rashes (18c, 18d); chronic coughing, sinusitis, COPD, dyspnea, respiratory abnormalities and fatigue (1, 12-14, 17); skin abnormalities, hair loss (16, 18a-b, 18c-d, 19, 20a, 20b); chronic brain damage with loss of function and memory (20b, 21–24), altered behavior, increased sensitivities to sound, light, odors (18c)... continued</p>

¹ OSHA. 2023. Standard interpretation: Clarification on the work-related exception in 1904.5(b)(2)(viii) for the common cold or flu. 1904.5(b)(2)(viii). **11/15/2023**.

² OSHA, 2010. Standard interpretation: OSHA Training standards policy statement. Involving 1910.123(k), 1910.147(c), 1910.1030(g), 19101200(h), 1926.21. 4/28/2010.

SDS statement, Complaint overview	Specific Complaint
<p>4.2. Most important symptoms continued</p> <p>Delayed symptoms/effects continued</p>	<p>long-term endocrine and hormonal disorders with increased risk of obesity or abnormal weight gain, type 2 diabetes (25-28), heart attacks and fatal coronary heart disease (25-28). Lab studies support the symptoms (2, 15, 21, 22, 29, 30, 31) and provide evidence of kidney and liver dysfunction (33-34); increased risk of cancers (5-9); multi-generational harm as a reproductive toxin that may damage an unborn child (10).</p>
<p>4.3. Indication of any immediate medical attention and special treatment needed.</p> <p>Notes for the doctor: “Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.”</p> <p>Specialty treatment: “Not known.” DANGEROUSLY MISLEADING, INCORRECT, OUTDATED.</p>	<p>Treatment requires a systemic, not symptomatic, approach. Since 2012, § 1910.1200 A.4.1. has described a process of respiratory/skin sensitization that is <i>independent</i> of dose, i.e., there is no safe level. The mechanism was published in 2021.³ If symptoms persist or repeat, a specialty physician trained in occupational and environmental medicine should treat the worker to minimize long-term harm. <i>This is critical information that must be communicated in the SDS.</i></p>
<p>Sec. 6. Accidental release measures</p> <p>6.2. Environmental precautions “Avoid release to the environment, if this is not the intended use.”</p> <p>Sec. 8. Exposure controls In 8.2. Environmental exposure controls: “None.” MISLEADING, INACCURATE.</p>	<p>6.2, 8.2. MISLEADING, INACCURATE: Since product use involves its release into the environment during oil spill response, then the SDS must communicate the expected environmental hazards from releasing the product into the environment based on experience with similar products used for this purpose. Expected exposure controls might include, for example, air monitoring and worker health monitoring.</p>
<p>Sec. 11: Toxicological Information</p> <p>Route of entry: Skin contact. Eye contact. Ingestion. Inhalation. ACCURATE.</p> <p>Other information: “No information available.” INACCURATE.</p> <p>Respiratory hazard: MISSING.</p> <p>Skin corrosion/irritation: “Causes skin irritation.” INACCURATE.</p> <p>Eye damage/irritation: “Causes serious eye damage.” INACCURATE.</p>	<p>Route accurately includes inhalation, supporting claims to communicate the inhalation hazard throughout this document, e.g., in sections 2, 4, 6, and 8.</p> <p>INACCURATE: As previously noted, other relevant specific information is available (see note, Sec. 2.3), and a hazard class or statement such as “irritation” or “damage” cannot be substituted for a symptom description which must be described in common language, consistent with an OSHA 2010 standard interpretation and descriptions in the hazard communication standard § 1910.1200 Appendix A (see notes and examples in Sec. 4.2).</p>

³ Masri S, et al. 2021. Toxicant-induced loss of tolerance for chemicals, foods, and drugs: Assessing patterns of exposure behind a global phenomenon. *Environ Sci Eur* 33:65. DOI; Miller CS, et al. 2021. Mast cell activation may explain many cases of chemical intolerance. *Environ Sci Eur* 33:129. DOI; see also Hoffman TILT Program online. University of Texas Health–San Antonio. <https://tiltresearch.org/>

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 11: Toxicological Information continued</p> <p>Respiratory or skin sensitization: “No information available.”</p> <p>Carcinogenicity: “No information available.”</p> <p>Reproductive Toxicity: “No information available.”</p> <p>TOST⁴-repeated exposure: “No information available.”</p> <p>Set of four hazard statements: MISLEADING, INACCURATE, INCORRECT.</p>	<p>MISLEADING, INACCURATE, INCORRECT: While this <i>product</i> may not be classified for the set of four hazards based on traditional toxicity tests, the available evidence from human experience and modern rapid toxicity or exposure assays⁵ on common ingredients in a similar product, Corexit 9500A, used for a similar purpose as an oil dispersant, strongly indicate that normal use of this product can be expected to cause multiple health issues and that the magnitude of harm will be consistently greater from oil-dispersant exposures than from oil alone.</p> <p>For example, the human experience for on-site field response workers who were exposed to oil and dispersant via inhalation was significantly associated with acute symptoms and long-term harm to the respiratory system (1, 3, 4, 12-14, 19), neurological system (23, 24), and cardiovascular system (25-28). Lab studies supported the human experience with findings that exposure to oil-dispersant mixtures altered membrane permeability of human bronchial epithelial cells and the blood brain barrier (11, 21) and triggered multiple cancer pathways in human bronchial epithelial cells (5, 6, 7, 8) and mice models (9).</p> <p>The human experience for on-site field response workers who were exposed to oil and dispersant via skin contact was also significantly associated with acute symptoms and long-term harm to the integumentary system (16, 17, 18a-c, 18d, 19, 20b), neurological system (23, 24), and cardiovascular system (27, 28a, 28b). Further, dispersants enhanced uptake of oil across the skin (19), moving oil and dispersant into the blood (25-27).</p> <p>Once in the blood (via skin contact or inhalation), the chemical mixture DOSS, alone (30, 31) or in combination with Span 80 or Tween 80 (29) in humans and mice, acts on receptor proteins in the endocrine system in ways that increase the obesogenic potential of this product (Corexit dispersant) and can cause end organ damage (as found in both epidemiology studies) such as obesity, lipid metabolic disorders, and increased risk of high cholesterol, heart attack, stroke, and type 2 diabetes (27-28, 32).</p> <p>The human experience with inhalation and skin contact is well supported by lab studies that found dispersant use greatly increased aerosolization of surface oil slick (see 20a footnotes) and field studies that found the dominate</p>

⁴ TOST is “Target organ system toxicity” in the GHS v7 revision.

⁵ Ginesberg GL, et al. **2019**. Commentary: New toxicology tools and the emerging paradigm shift in environmental health decision-making. *Env Health Persp* 127(12):125002. doi.org/10.1289/EHP4745

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 11.1. Toxicological information Set of four hazard statements continued</p> <p>Missing Symptoms/effects: MISLEADING, INACCURATE (See Sec. 4.2.)</p>	<p>fate of surface oil was secondary organic aerosols that were transported at least 80 miles inland.⁶ This human evidence strongly indicates that this product: This human evidence strongly indicates that this product:</p> <ul style="list-style-type: none"> - May cause skin corrosion/irritation: H315/GHS07 - May cause an allergic skin reaction (sensitization): H317/GHS07 - May cause serious eye damage/irritation: H318/GHS05 - Is harmful if inhaled: H332/GHS07 - May cause allergy or asthma symptoms or breathing difficulties if inhaled: H334/GHS08; - May cause cancer: H350/GHS08 - May cause cancer by inhalation: H350i/GHS08 - May damage the unborn child: H361d/GHS08 - May cause damage to organs through prolonged or repeated exposure: H373/GHS08. <p><i>This product should be labeled and classified accordingly.</i></p>
<p>Sec. 12: Ecological information 12.1. Toxicity</p> <p>Ecology – general: “The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.” MISLEADING, INACCURATE, INCORRECT.</p>	<p>12.1. MISLEADING, INACCURATE, INCORRECT: Ecological experience with Corexit 9500A and certain ingredients identical to those in this product consistently found that exposure to oil-dispersant mixtures caused greater harm than exposure to oil alone to sea life across species.</p> <p>For example, oil-dispersant mixtures were more toxic than oil alone: to oil-eating bacteria, slowing overall biodegradation of oil (51); to microzooplankton rotifers (52) and ciliates, disrupting predator-prey controls and triggering red tide blooms that are harmful to humans and marine life (53, 54); and to deep-sea corals via endosymbiont partners that provide nutrition (55) and vital services to their coral hosts (56, 57).</p> <p>Dispersant Corexit 9500A altered the permeability of gill membranes in oysters (58), blue crabs (59), and two species of forage fish (59, 60), disrupting osmoregulation and impairing survival, likely facilitated by anionic surfactants (DOSS) (60). The dispersant also altered immune function in oysters and gene expression pathways relating to immunity, blood, and circulation processes in a third species of forage fish (61) and is likely implicated (via association with oil) in arrhythmias in the developing hearts of tuna and amberjack (62) (see footnote 1).</p>

⁶ Ward CP, et al. et al. **2018**. Partial photochemical oxidation was a dominant fate of *Deepwater Horizon* surface oil. *Environ Sci Technol.* 52:1797–1805. [DOI](#); Middlebrook AM, et al. **2012**. Air quality implications of the Deepwater Horizon oil spill. *Proc Nat Acad Sci. Phys Sci*, 109:20280–5. [DOI](#).

SDS statement, Complaint overview	Specific Complaint
<p>Sec. 2.1. (Ecological) Toxicity continued</p>	<p>Among seabirds, dispersants with similar composition (Corexit 9500A and Finosol OSR) caused catastrophic loss of waterproofing with lethal effects similar to impacts from oil alone (63-64). Other impacts, such as eye damage in adults (65) and lower spleen weights in hatchlings from eggs treated with mixtures (66), were greater with oil-dispersant mixtures compared to oil alone. A review recommended accounting for ecosystem harm from dispersants (67).</p> <p>In sea turtles, hatchlings from eggs treated with mixtures had increased harm (altered blood chemistry parameters and lack of weight gain) compared to oil alone (68), while oil-dispersant uptake was documented in juveniles and adults (69).</p> <p>Corexit dispersants were cytotoxic and genotoxic to sperm whale skin cells (70) and 9500A suppressed proliferation of white blood cell lymphocytes in bottlenose dolphins, making animals more susceptible to disease and poor health (71), consistent with field study findings of high-incidence of lung disease, low levels of cortisol, weight loss (72), failed pregnancies (73), slow recovery (74), population-level harm (74), and a decade of declining populations in the area impacted by the Deepwater Horizon oil disaster (75). Recent reviews found post-spill damage assessment of both nearshore and offshore, oceanic toothed cetaceans “vastly” underestimated the harm (76, 77).</p> <p>The ecological evidence strongly indicates this product:</p> <ul style="list-style-type: none"> – Is hazardous to the aquatic environment with long-lasting effects: H410/GHS09. <p><i>This product should be classified and labelled accordingly.</i></p>
<p>12.2. Persistence and degradability “Expected to be biodegradable.” MISLEADING, INCORRECT.</p>	<p>MISLEADING, INCORRECT: The statement reveals an inconvenient truth, i.e., while the <i>product</i> may break apart rapidly in the environment, the <i>ingredients</i> in the product may not. For example, in cold water tests, the “degradation half-life of DOSS increased from 4.1 days to >500 days” as Corexit 9500A levels approached expected field levels and a DOSS hydrolysis product “showed limited degradation compared to the other surfactants” tested.⁷ Field studies found DOSS can persist with oil for ~4 years in the environment.⁸ Persistence in the environment should be determined based on a product or its ingredients, whichever is least degradable.</p>

⁷ Brakstad OG, et al. 2018. Biodegradation of oil spill dispersant surfactants in cold seawater. *Chemosphere*. Aug;204:290-293. doi: 10.1016/j.chemosphere.2018.04.051.

⁸ White HK, et al. 2014. Long-term persistence of dispersants following the Deepwater Horizon oil spill. *Environ Sci Technol Lett*. 1(7):295–299. DOI. See also Table 2 (19), DOSS persists with oil for at least 12-20 months.

Exhibit A – Safety Data Sheets in Noncompliance Complaint

2–12 Corexit™ EC9500A

13–21 Dasic Ecosafe OSD

22–28 Finasol OSR 52 IBC

29–35 Accell Clean® DWD 2.0

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : COREXIT™ EC9500A
 Other means of identification : Not applicable.
 Recommended use : OIL SPILL DISPERSANT
 Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
 Company : COREXIT Environmental Solutions LLC
 11177 S. Stadium Drive
 Sugar Land, Texas 77478
 USA
 TEL: +1 (832) 851-5164
 Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC
 Issuing date : 08/30/2019

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4
 Acute toxicity (Inhalation) : Category 4
 Eye irritation : Category 2A

GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : Combustible liquid
 Causes serious eye irritation.
 Harmful if inhaled.

Precautionary Statements : **Prevention:**
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/ eye protection/ face protection.
Response:
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
 Store in a well-ventilated place. Keep cool.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Pure substance/mixture	: Mixture	CAS-No.	Concentration: (%)
Chemical Name		64742-47-8	10 - 30
Distillates, petroleum, hydrotreated light		Proprietary	10 - 30
Organic sulfonic acid salt		57-55-6	1 - 5
Propylene Glycol			

Section: 4. FIRST AID MEASURES

In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
In case of skin contact	: Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed	: Rinse mouth. Get medical attention if symptoms occur.
If inhaled	: Remove to fresh air. Treat symptomatically. Get medical attention.
Protection of first-aiders	: In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	: Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Foam Carbon dioxide Dry powder Other extinguishing agent suitable for Class B fires For large fires, use water spray or fog, thoroughly drenching the burning material.
Unsuitable extinguishing media	: None known.
Specific hazards during firefighting	: Fire Hazard Keep away from heat and sources of ignition. Flash back possible over considerable distance.
Hazardous combustion products	: Decomposition products may include the following materials: Carbon oxides Sulphur oxides metal oxides
Special protective equipment for firefighters	: Use personal protective equipment.
Specific extinguishing methods	: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not

SAFETY DATA SHEET

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breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Stainless Steel 304, Stainless Steel 316L, Aluminum, Hastelloy C-276, MDPE (medium density polyethylene), HDPE (high density polyethylene), PVC, Plexiglass, Perfluoroelastomer, PTFE, TFE, FEP (encapsulated)
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Carbon steel, Buna-N, Brass, Copper, Natural rubber, Polyethylene, Polypropylene, Ethylene propylene, EPDM, Neoprene, Nitrile, Polyurethane, Fluoroelastomer, Chlorosulfonated polyethylene rubber, Polytetrafluoroethylene/polypropylene copolymer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Distillates, petroleum, hydrotreated light	64742-47-8	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
		TWA (Mist)	5 mg/m ³	OSHA Z1
		TWA (Mist)	5 mg/m ³	NIOSH REL
		STEL (Mist)	10 mg/m ³	NIOSH REL
Propylene Glycol	57-55-6	TWA	10 mg/m ³	AIHA WEEL

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Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : amber

Odour : hydrocarbon-like

Flash point : 83 °C, Method: ASTM D 93, Pensky-Martens closed cup, Does not sustain combustion.

pH : 6.2,(100 %)

Odour Threshold : no data available

Melting point/freezing point : POUR POINT: < -57 °C, ASTM D-97

Initial boiling point and boiling range : 147 °C, (760 mm Hg), Method: ASTM D 86

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : Not applicable.

Lower explosion limit : Not applicable.

Vapour pressure : 15.5 mm Hg, (37.8 °C), ASTM D 323,

Relative vapour density : no data available

Relative density : 0.95, (15.6 °C), ASTM D-1298

Density : 7.91 lb/gal

Water solubility : Miscible

Solubility in other solvents : no data available

Partition coefficient: n-octanol/water : no data available

Auto-ignition temperature : no data available

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Thermal decomposition	:	no data available
Viscosity, dynamic	:	212.3 mPa.s (0 °C) 79.5 mPa.s (20 °C)
Viscosity, kinematic	:	177 mm ² /s (0 °C) 70 mm ² /s (15.6 °C) 22.5 mm ² /s (40 °C)
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, flames and sparks. Avoid extremes of temperature.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Decomposition products may include the following materials: Carbon oxides Sulphur oxides metal oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye irritation.
Skin	:	Health injuries are not known or expected under normal use.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Harmful if inhaled.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	:	Redness, Pain, Irritation
Skin contact	:	No symptoms known or expected.

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Ingestion : No symptoms known or expected.

Inhalation : No information available.

Toxicity

Product

Acute oral toxicity : LD50 rat: > 5,000 mg/kg
Test substance: Product
LD50 rat: > 5,000 mg/kg
Test substance: Distillates, petroleum, hydrotreated light
LD50 rat: > 38,000 mg/kg
Test substance: Oxyalkylated Fatty Acid Derivative
LD50 rat: > 36,400 mg/kg
Test substance: Oxyalkylate Polymer
LD50 rat: 4,620 mg/kg
Test substance: Organic Sulfonic Acid Salt
LD50 mouse: 2,160 mg/kg
Test substance: Glycol Ether
LD50 rat: > 16,000 mg/kg
Test substance: Polyol ester
LD50 rat: 4,000 mg/kg
Test substance: Glycol Ether

Acute inhalation toxicity : LC50 rat: > 5.35 mg/l
Exposure time: 4 hrs
Test atmosphere: dust/mist
Test substance: Product
LC50 rat: 42.1 mg/l
Exposure time: 4 hrs
Test substance: Glycol Ether
LC50 rat: 20 mg/l
Exposure time: 4 hrs
Test substance: Organic Sulfonic Acid Salt
LC50 rat: > 290 mg/l
Exposure time: 4 hrs
Test substance: Distillates, petroleum, hydrotreated light

Acute dermal toxicity : LD50 rabbit: > 5,000 mg/kg
Test substance: Product
LD50 rabbit: > 3,160 mg/kg
Test substance: Distillates, petroleum, hydrotreated light
LD50 rat: > 2,000 mg/kg
Test substance: Glycol Ether
LD50 rabbit: 10,000 mg/kg
Test substance: Organic Sulfonic Acid Salt

Skin corrosion/irritation : Species: rabbit

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		Result: Mild skin irritation Test substance: Product
Serious eye damage/eye irritation	:	Species: rabbit Result: Eye irritation Test substance: Product
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	no data available
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects Product	:	This product has no known ecotoxicological effects.
Toxicity to fish	:	LC50 Inland Silverside: 25.2 mg/l Exposure time: 96 hrs Test substance: Product LC50 Common Mummichog: 140 mg/l Exposure time: 96 hrs Test substance: Product LC50 Turbot: 75 mg/l Exposure time: 96 hrs Test substance: Product
Toxicity to daphnia and other aquatic invertebrates	:	LC50 Acartia tonsa: 34 mg/l Exposure time: 48 hrs Test substance: Product LC50 Artemia: 20.7 mg/l Exposure time: 48 hrs Test substance: Product LC50 Mysidopsis bahia (opossum shrimp): 32.23 mg/l Exposure time: 48 hrs Test substance: Product LC50 Acartia tonsa: 2 mg/l Exposure time: 48 hrs Test substance: Product

Components

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Toxicity to algae : Organic sulfonic acid salt
EC50 Desmodemus subspicatus (green algae): 82.5 mg/l
Exposure time: 72 h

Propylene Glycol
EC50 : 19,000 mg/l
Exposure time: 96 h

Components

Toxicity to bacteria : Distillates, petroleum, hydrotreated light
> 1,000 mg/l

Propylene Glycol
> 20,000 mg/l

Components

Toxicity to fish (Chronic toxicity) : Propylene Glycol
Chronic Toxicity Value: 2,500 mg/l
Exposure time: 30 d

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Propylene Glycol
NOEC: 13,020 mg/l
Exposure time: 7 d

Persistence and degradability

The organic portion of this preparation is expected to be readily biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 10 - 30%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

Based on a review of the individual components, utilizing U.S. EPA models, this material is not expected to bioaccumulate. The product is readily eliminated.

Other information

no data available

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Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

TSCA list : Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This product does not contain a RQ substance, or this product contains a substance with a RQ, however the calculated RQ exceeds the reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

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This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

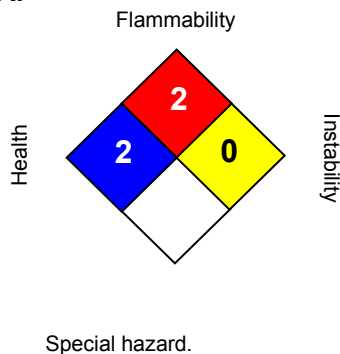
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 08/30/2019
Version Number : 0.0
Prepared By : Regulatory Affairs

SAFETY DATA SHEET

COREXIT™ EC9500A

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Dasic EcoSafe OSD
Product code : USA-1

1.2. Recommended use and restrictions on use

Use of the substance/mixture : 55/999 Others

1.3. Supplier

Dasic USA LLC
3500 South DuPont Highway
Dover, Delaware 19901
USA
T (832) 633-0365

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation, Category 2 H315 Causes skin irritation.
Full text of H-statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning
Hazard statements (GHS US) : H315 - Causes skin irritation.
Precautionary statements (GHS US) : P264 - Wash hands thoroughly after handling.
P280 - Wear eye protection, protective gloves.
P302+P352 - If on skin: Wash with plenty of water.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Distillates (petroleum), hydrotreated light	CAS-No.: 64742-47-8	≥ 10 – < 15	Asp. Tox. 1, H304
Sodium dioctyl sulphosuccinate	CAS-No.: 577-11-7	≥ 10 – < 15	Skin Irrit. 2, H315 Eye Dam. 1, H318

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: First aider: Pay attention to self-protection!. First aid personnel should wear appropriate protective equipment during any rescue.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Not expected to present a significant inhalation hazard under anticipated conditions of normal use. If experiencing respiratory symptoms: Call a poison center or a doctor.
First-aid measures after skin contact	: Gently wash with plenty of soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Immediately rinse with water for a prolonged period while holding the eyelids wide open. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects	: More detailed information: See section 11.
Symptoms/effects after inhalation	: Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact	: Irritation. irritation (itching, redness, blistering).
Symptoms/effects after eye contact	: redness, itching, tears. May cause slight irritation.
Symptoms/effects after ingestion	: None under normal conditions.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry powder. Foam. Water fog. Water spray. Do not allow run-off from fire-fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	: Will ignite if exposed to intensive heat. The vapours are denser than air and may travel along the ground. Distance ignition possible.
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Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Carbon dioxide. Carbon monoxide. Sulphur oxides.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Do not breathe fumes.
Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Eliminate every possible source of ignition. Ensure adequate ventilation. Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Concerning personal protective equipment to use, see section 8. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak without risks if possible. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Dispose of the material collected according to regulations. After cleaning, flush traces away with water.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

Refer to protective measures listed in Sections 7 and 8. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only with adequate ventilation. Wear personal protective equipment.
Hygiene measures : Always wash hands after handling the product. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep out of the reach of children. Store away from oxidising agents. Store in a closed container. Keep away from ignition sources. Keep cool. Protect from sunlight.
Packaging materials	: Preferably keep in original container. Consult supplier for advice on alternative packaging. Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Provide for appropriate exhaust ventilation at places of vapours accumulation. Local exhaust and general ventilation must be adequate to meet exposure standards. Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Hand protection:
Protective gloves. Gloves must be replaced after each use and whenever signs of wear or perforation appear
Eye protection:
Safety glasses
Skin and body protection:
Handle in accordance with good industrial hygiene and safety procedures. Wear suitable protective clothing. Remove contaminated clothing and shoes. Wash clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work
Respiratory protection:
No respiratory protection needed under normal use conditions. In case of insufficient ventilation, wear suitable respiratory equipment. High vapour/gas concentration: self-contained respirator

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Viscous liquid.
Colour	: amber
Odour	: Mixture contains one or more component(s) which have the following odour:
Odour threshold	: No data available
pH	: No data available

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Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 93 °C Pensky-Martens closed cup.
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapour pressure	: 11 (<) mm Hg 68°F
Relative vapour density at 20°C	: No data available
Relative density	: 1.0003 at 60°F
Solubility	: Miscible.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: 60.4 mm ² /s at 40°C
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Sparks. Open flame. Heat.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon oxides (CO, CO₂). Sulphur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Sodium dioctyl sulphosuccinate (577-11-7)

LD50 oral	4620 mg/kg bodyweight
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Sodium dioctyl sulphosuccinate (577-11-7)	
LD50 dermal rabbit	> 10000 mg/kg bodyweight Animal: rabbit, Animal sex: male, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LD50 dermal	> 10000 mg/kg bodyweight
LC50 Inhalation - Rat (Dust/Mist)	20000 mg/l
ATE US (oral)	4620 mg/kg bodyweight
ATE US (dust,mist)	20000 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified ((OECD 492 method)). May cause slight irritation to eyes
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Sodium dioctyl sulphosuccinate (577-11-7)	
NOAEL (oral, rat, 90 days)	> 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Aspiration hazard	: Not classified
Viscosity, kinematic	: 60.4 mm ² /s at 40°C
Symptoms/effects	: More detailed information: See section 11.
Symptoms/effects after inhalation	: Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact	: Irritation. irritation (itching, redness, blistering).
Symptoms/effects after eye contact	: redness, itching, tears. May cause slight irritation.
Symptoms/effects after ingestion	: None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
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Dasic EcoSafe OSD	
Additional information	Americamysis bahia, 48-hr LC50, 156.9 ppm LCL95; Menidia beryllina, 96-hr LC50, 271.1 ppm, LCL95; Americamysis bahia, 7-day IC50, 88.9 LCL95; Menidia beryllina, 7-day IC50, 204.3 LCL95; Americamysis bahia, 7-day NOEC, 10 ppm median; Menidia beryllina, 7-day NOEC, 100 ppm median.

Sodium dioctyl sulphosuccinate (577-11-7)	
LC50 - Fish [1]	28 mg/l
EC50 - Other aquatic organisms [1]	36 mg/l waterflea

12.2. Persistence and degradability

Dasic EcoSafe OSD	
Persistence and degradability	Expected to be biodegradable.

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Sodium dioctyl sulphosuccinate (577-11-7)	
Persistence and degradability	Not rapidly degradable
Distillates (petroleum), hydrotreated light (64742-47-8)	
Persistence and degradability	Not rapidly degradable

12.3. Bioaccumulative potential

Dasic EcoSafe OSD	
Bioaccumulative potential	Potential to bioaccumulate is low. Mixture does not contain substance (s) classified as PBT or vPvB in concentrations above 0,1%.
Sodium dioctyl sulphosuccinate (577-11-7)	
Partition coefficient n-octanol/water (Log Pow)	6.1

12.4. Mobility in soil

Dasic EcoSafe OSD	
Ecology - soil	Potential for mobility in soil is very high.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation	: If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.
Waste treatment methods	: Recycle where possible. Otherwise dispose of in accordance with local regulations. Always dispose of wastes to an approved waste disposal facility. Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Empty containers should be taken for recycling, recovery or waste in accordance with local regulation. Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not regulated
Proper Shipping Name (IMDG)	: Not regulated
Proper Shipping Name (IATA)	: Not regulated

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14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not regulated

IMDG

Transport hazard class(es) (IMDG) : Not regulated

IATA

Transport hazard class(es) (IATA) : Not regulated

14.4. Packing group

Packing group (DOT) : Not regulated

Packing group (IMDG) : Not regulated

Packing group (IATA) : Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

Not regulated

IMDG

Not regulated

IATA

Not regulated

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Sodium dioctyl sulphosuccinate	577-11-7	Present	Active	
Distillates (petroleum), hydrotreated light	64742-47-8	Present	Active	

15.2. International regulations

CANADA

Sodium dioctyl sulphosuccinate (577-11-7)

Listed on the Canadian DSL (Domestic Substances List)

Distillates (petroleum), hydrotreated light (64742-47-8)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

Dasic EcoSafe OSD

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National regulations

Sodium dioctyl sulphosuccinate (577-11-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Distillates (petroleum), hydrotreated light (64742-47-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

No additional information available

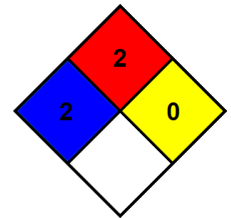
SECTION 16: Other information

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

Full text of H-statements

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.

NFPA health hazard	: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard	: 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating	
Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II IIIA)
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Safety Data Sheet (SDS), USA

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



FINASOL OSR 52 IBC

Safety Data Sheet

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Section 1: Identification

1.1. Product identifier

Product form : Mixture
Product Identifier(s) : FINASOL OSR 52 IBC

1.2. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Dispersant

1.3. Details of the supplier of the safety data sheet

TotalEnergies Petrochemicals & Refining USA, Inc.
P O Box 674411
Houston, TX 77267-4411

For non-emergency product information:
Phone: 713-483-5000
Email: product.stewardship@totalenergies.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (Toll Free USA & Canada) / 703-527-3887 (Multiple languages)
TotalEnergies Petrochemicals & Refining USA, Inc.: 1-800-322-3462 (Language: English only)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 1

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS-US) :

Causes skin irritation
Causes serious eye damage

Precautionary statements (GHS-US) :

Wash hands, forearms and face thoroughly after handling.
Wear eye protection, face protection, impermeable protective gloves.
If on skin: Wash with plenty of water.
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.
Specific treatment (see Section 4.1 of SDS or information on this label).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

2.3. Hazards not otherwise classified

Other hazards which do not result in classification :

Repeated exposure may cause skin dryness or cracking.

2.4. Unknown acute toxicity (GHS-US)

Not applicable

2.5. Additional information

No additional information available

Section 3: Composition/Information on ingredients

3.1. Substance

Not applicable

FINASOL OSR 52 IBC

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3.2. Mixture

Where concentration of substances listed for this product are given in ranges, the exact percentage is being withheld as a trade secret.

Name	CAS-No.	%
Petroleum distillates, hydrotreated light (not contributing to the hazard classification)	64742-47-8	10 - 25
Diocetyl sodium sulfosuccinate	577-11-7	10 - 25
(2-methoxymethylethoxy)propanol (not contributing to the hazard classification)	34590-94-8	10 - 25

Non-ionic surfactants: > 30%

Anionic surfactants: 15 - 30%

Section 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Get medical advice/attention. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, give artificial respiration.
- First-aid measures after skin contact : Get medical advice/attention. Remove immediately contaminated clothing. Wash with plenty of soap and water.
- First-aid measures after eye contact : Get medical advice/attention. Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Get medical advice/attention. Rinse mouth out with water. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects after skin contact : Causes skin irritation. Repeated exposure may cause skin dryness or cracking.
- Symptoms/effects after eye contact : Causes serious eye damage.
- Symptoms/effects after ingestion : Abdominal pain, nausea.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Section 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Dry chemical. Carbon dioxide. Water spray or fog. Foam.
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the chemical

- Fire hazard : Not expected to be a fire/explosion hazard under normal conditions of use.
- Explosion hazard : Not expected to be a fire/explosion hazard under normal conditions of use.
- Hazardous decomposition products in case of fire : Carbon oxides (CO, CO₂). Aldehydes. Soot.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Complete protective clothing. Self-contained breathing apparatus.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- Emergency procedures for non-emergency personnel : Evacuate area.
- Emergency procedures for emergency responders : Ventilate area. Stop leak if safe to do so.

6.2. Methods and material for containment and cleaning up

- For containment : Do not allow material to contaminate ground water system.
- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.3. Reference to other sections

See section 8. Exposure controls/personal protection.

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Section 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist, spray, vapors.

Hygiene measures : Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : heat sources, ignition sources. Keep container tightly closed.

Incompatible products : Strong acids. Strong oxidizing agents.

Section 8: Exposure controls/personal protection

8.1. Occupational Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV, or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

None

8.2. Exposure controls

Appropriate engineering controls : Ensure adequate ventilation. Provide readily accessible eye wash stations and safety showers.

Hand protection : Impermeable protective gloves. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Replace gloves immediately when torn or any change in appearance (dimension, color, flexibility, etc.) is noticed.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear adequate protective clothing which covers any exposed parts of the body. Chemical resistant safety shoes.

Respiratory protection : Ensure good ventilation of the work station.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Color : light yellow.
Odor : Petroleum distillates.
Odor threshold : No data available
pH : 9 – 10.5
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : No data available
Freezing point : No data available
Initial boiling point and boiling range : > 150 °C
Flash point : 98 °C ASTM D 93
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability : No data available
Vapor pressure : 40 hPa at 37.8°C
Relative vapor density at 20°C : No data available
Relative density : 1.004
Density : 1.004 g/cm³
Solubility : Soluble in water.
Partition coefficient n-octanol/water (Log Kow) : No data available
Viscosity, kinematic : 32 mm²/s
Viscosity, dynamic : No data available
Explosion limits : No data available

9.2. Other information

No additional information available

Section 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

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10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Strong acids. Strong oxidizing agents.

10.6. Hazardous decomposition products

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

Section 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Ingestion. Inhalation. Skin and eye contact.

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Petroleum distillates, hydrotreated light (64742-47-8)

LD50 oral rat	> 5000 mg/kg (Source: IUCLID)
LD50 dermal rabbit	> 2000 mg/kg (Source: NLM_CIP)
LC50 inhalation rat	> 5.2 mg/l/4h

Diocetyl sodium sulfosuccinate (577-11-7)

LD50 oral rat	3080 mg/kg (Source: EPA HPV)
LD50 dermal rabbit	> 10000 mg/kg (Source: CHEMVIEW)

(2-methoxymethylethoxy)propanol (34590-94-8)

LD50 oral rat	5.35 g/kg (Source: NLM HSDB)
LD50 dermal rabbit	9500 mg/kg (Source: NLM_CIP)
LC50 inhalation rat	5.1 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

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Section 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Diocetyl sodium sulfosuccinate (577-11-7)	
LC50 - Fish [1]	20 – 40 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static] Source: EPA)
EC50 - Crustacea [1]	36 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	< 24 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: EPA)
Petroleum distillates, hydrotreated light (64742-47-8)	
LC50 - Fish [1]	45 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: IUCLID)
EC50 - Other aquatic organisms [1]	> 1000 mg/l (Exposure time: 72 h - Species: Algae - Pseudokirchnerella subcapitata Source: OECD 201)
LC50 - Fish [2]	2.2 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static] Source: EPA)
(2-methoxymethylethoxy)propanol (34590-94-8)	
LC50 - Other aquatic organisms [1]	1919 (Exposure time: 48 h - Species: Daphnia - Daphnia Magna)

12.2. Persistence and degradability

Diocetyl sodium sulfosuccinate (577-11-7)	
Persistence and degradability	Not readily biodegradable.
Petroleum distillates, hydrotreated light (64742-47-8)	
Persistence and degradability	Readily biodegradable. 69% - 28 days (OECD 301F).
(2-methoxymethylethoxy)propanol (34590-94-8)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

Diocetyl sodium sulfosuccinate (577-11-7)	
BCF - Fish [1]	3.47 – 3.78
BCF - Fish [2]	9.33
Petroleum distillates, hydrotreated light (64742-47-8)	
BCF - Fish [1]	61 – 159
Partition coefficient n-octanol/water (Log Kow)	> 4 (high)

12.4. Mobility in soil

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Mobility in soil	No known significant effects or critical hazards. Given its physical and chemical characteristics, the product is generally mobile in the ground

12.5. Other adverse effects

No additional information available

Section 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Ecology - waste materials : Avoid release to the environment.

Section 14: Transport information

US Transport (DOT) for Bulk Shipments (Non-Bulk Shipments May Differ)

Not regulated by US DOT

Transport by sea (IMDG)

Not regulated by IMDG

Air transport (IATA)

Not regulated by IATA

Section 15: Regulatory information

15.1. US Federal regulations

EPA TSCA Status

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All components of this product are listed or exempt from listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) Active inventory. This product has no special requirements under TSCA, such as significant new use rules (SNUR), consent orders, test rules, or sections 4, 5, 6, 8(a), 8(d), 12(b) requirements.

SARA Section 313 Supplier Notification

This product contains no toxic chemicals in excess of the applicable de minimis concentration that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA Section 311/312 Hazard Classes

Health hazard - Serious eye damage or eye irritation
Health hazard - Skin corrosion or Irritation
Health hazard - Hazard Not Otherwise Classified (HNOC)

15.2. International regulations

CANADA

No additional information available

National inventories

AICS (Australian Inventory of Chemical Substances)

DSL (Canadian Domestic Substances List)

IECSC (China Inventory of Existing Chemical Substances)

EINECS (European Inventory of Existing Commercial Chemical Substances)

ENCS (Japanese Existing & New Chemical Substances Inventory)

KECI (Chemical Inventory of Korea)

NZIoC (New Zealand Inventory of Chemicals)

PICCS (Philippines Inventory of Chemicals and Chemical Substances)

TCSI (Taiwan Chemical Substance Inventory)

All components are listed or exempted

All components are listed or exempted

All components are listed or exempted

All components are listed or exempted

All components are listed or exempted

All components are listed or exempted

All components are listed or exempted

All components are listed or exempted

All components are listed or exempted

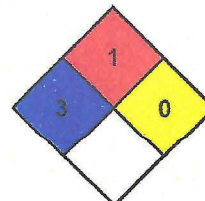
15.3. US State regulations

California Proposition 65 - To the best of our knowledge, there are no Proposition 65 chemicals present in this product at levels that would require warning under the California Safe Drinking Water and Toxic Enforcement Act.

Section 16: Other information

NFPA (National Fire Protection Association)

NFPA health hazard : 3
NFPA fire hazard : 1
NFPA reactivity : 0



Hazard System Rating

Health : 3
Flammability : 1
Physical Hazard : 0
Personal protection : See section 8 of SDS

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US OSHA LABEL as specified under 29 CFR §1910.1200 (f). The label shown may include supplemental information in addition to required elements.

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TotalEnergies Petrochemicals & Refining USA, Inc.
PO Box 674411
Houston, TX 77267-4411 USA
Tel. 713-483-5000



Danger

Causes skin irritation

Causes serious eye damage

Wash hands, forearms and face thoroughly after handling.

Wear eye protection, face protection, impermeable protective gloves.

If on skin: Wash with plenty of water.

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.

Specific treatment (see Section 4.1 of SDS or information on this label).

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

US SDS Version: 1.0

Issue date: May 28, 2024

SDS ID: OSR_52_IBC

SDS REFERENCE NUMBER: SF0228

SDS Template - TotalEnergies SDS US TEPRI Version 22.02

The information contained in this Safety Data Sheet (SDS) is believed by TotalEnergies Petrochemicals & Refining USA, Inc. (TEPRI) to be accurate on the date issued. However, materials may present unknown hazards and should be used with caution. Final determination of suitability and use of any material is the sole responsibility of the user. Neither TEPRI nor any of its subsidiaries or affiliated companies assumes any liability whatsoever for the accuracy or completeness of the information contained herein or reliance thereto. If the material is repackaged, the user is responsible and must ensure that proper health, safety and other necessary information is included with the material and/or on the container. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING THE MATERIALS OR THE INFORMATION CONTAINED IN THIS SDS. ALTERATION OF THIS DOCUMENT IS STRICTLY PROHIBITED.

Safety Data Sheet

According to 29 CFR 1910.1200

Trade name: Accell Clean® DWD 2.0

Product No: 159D2000

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Substance name : Accell Clean® DWD 2.0
CAS No : Mixture
Product code : 159D2000
Product description : Proprietary Mixture
Product type : Liquid
Other means of identification : Not available

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

Recommended uses : This product can be diluted.
Restrictions on use : Test compatibility of product with rubber or plastic before use.

1.3 Details of the supplier of the safety data sheet:

Supplier:

Name : Advanced BioCatalytics
18010 Skypark Circle, Suite 130
Irvine, CA, USA 92614

Information contact : Tel: +1 949-442-0880

E-Mail address of person responsible for this SDS : tech@abiocat.com

1.4 EMERGENCY TELEPHONE NUMBER: +1 800-424-9300 (Chemtrec)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

Classification according to 29 CFR 1910.1200

Acute Oral Tox. 5, H303

Acute Derm. Tox. 5, H313

Skin Irrit. 2, H315

Eye Dam. 1, H318

Acute Aquatic Tox. 2, H401

Full text of H-phrases: see SECTION 16.

2.2 Label elements

Labelling according to 29 CFR 1910.1200

Hazard pictograms



Signal word: Danger

Hazard statements:

H303 May be harmful if swallowed
H313 May be harmful in contact with skin
H315 Causes skin irritation
H318 Causes serious eye damage
H402 Harmful to aquatic life

Precautionary statements:

P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment, if this is not the intended use.
P280 Wear protective gloves and eye/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P312 Call a poison center/doctor if you feel unwell.

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P321 Specific treatment, seek medical attention.
P332+P317 If skin irritation occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P501 Dispose of contents/container in accordance with local regulations.

SECTION 3. Composition/information on ingredients

3.1 Substances/Mixture : Mixture

Substance name	CAS No.	Weight %	Classification according Regulation (EC) No. 1272/2008 [CLP]
Water and fermentation yeast metabolites (co-surfactant)	8013-01-2	30 - 35	
Dioctyl sodium sulfosuccinate (surfactant)	577-11-7	20 - 30	Acute Aquatic Tox. 3, H402 Serious Eye Damage 1, H318 Skin Irrit. 2, H315
Alcohols, C9-11, ethoxylated (surfactant)	68439-46-3	10 - 20	
Polysorbate (emulsifier)	9005-65-6	10 - 15	
Benzyl Alcohol	100-51-6	< 10	Acute Oral Tox. 4, H302 Skin Irrit. 3, H316 Eye Irrit. 2A, H319
Sorbitan monooleate (emulsifier)	1338-43-8	< 10	
Hexylene glycol	107-41-5	< 5	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Repr. 2, H361d

Additional information:

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

Full text of H- phrases: see SECTION 16.

This mixture does not contain further substances fulfilling the criteria of hazard class "acute toxicity" according to CLP regulation.

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation : If breathing is affected, move to fresh air.
Eye Contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Specific treatment: Immediately call a poison center/doctor/physician.
Skin contact : Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
Ingestion : Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.
Self-protection of the first aider : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation : No specific data
Eye contact : Pain, local redness, swelling.

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Skin contact : Skin redness, itching, swelling.

Ingestion : No specific data

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Special treatment : Not known.

SECTION 5: Firefighting measures

5.1 Suitable extinguishing media : Dry chemical, water spray, foam, or carbon dioxide.

5.2 Special hazards arising from the substance or mixture : When heated to decomposition, it emits acrid smoke and irritating fumes.

5.3 Advice for fire-fighters : As in any fire, wear self-contained breathing apparatus, pressure-demand, and full protective gear.

SECTION 6: Accidental release measures

6.1 Personal precautions : Wear personal protective equipment stated in Section 8.

Non-emergency personnel : No action shall be taken involving any personal risk or without suitable training.

Emergency responders : If specialized clothing is required to deal with the spillage, take note of any information from Section 8.

6.2 Environmental precautions : Avoid release to the environment, if this is not the intended use.

6.3 Methods and material for containment and clean up : Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Use a water rinse for final clean-up.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (Section 8).
Avoid unnecessary long term contact with skin, eyes, and clothing.
Do not taste or swallow. Use with adequate ventilation. Avoid unnecessary long term breathing of mists or vapors. Remove and wash contaminated clothing and footwear before reuse. Eating, drinking, and smoking are prohibited in areas where this material is handled, stored, and processed.

7.2 Conditions for safe storage, including any incompatibilities

Storage requirements : Keep out of reach of children. Keep container(s) stored in cool, well-ventilated area. Keep container tightly closed until ready for use. Avoid possible sources of ignition (spark or flame).

Incompatibilities : Strong acids. Strong bases. Sources of ignition.

Packaging materials : Unlined steel drums or plastic totes.

7.3 Specific end uses

Recommendations : See the label and Certificate of Analysis (CoA) for the recertification date.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits :
Benzyl Alcohol : TWA value 10 ppm

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control airborne levels.

Eye / Face protection : Wear safety goggles that prevent exposure to liquid splashes, mists, gases, or dusts.

Skin and body protection : Light protective clothing.

Hand protection : Wear rubber, nitrile, or latex gloves (chemical-resistant).

Other skin protection : Wear protective footwear.

Respiratory protection : No special masks are required if adequate ventilation is maintained.

Thermal Hazards : None.

Environmental exposure controls : None.

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SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical State	: Viscous liquid and Amber Color
Color	: Amber.
Odor	: Weak, neutral.
Odor Threshold	: No information available.
Taste	: No information available.
pH	: 5.5 – 7.5
Dilution pH	: No information available.
Melting point / Freezing point	: No information available.
Initial boiling point and boiling point range	: No information available.
Flash Point	: >100°C (>212°F)
Evaporation Rate	: No information available.
Flammability (solid/gas)	: No information available.
Solubility	: No information available.
Percent Volatile	: 45 – 49%
Vapor Pressure	: No information available.
Vapor Density	: No information available.
Relative Density	: 8.58 – 8.75 lbs/gal.
Specific Gravity	: 1.010 – 1.030
Kinematic viscosity	: 41.3 est @ 40°C
Auto-ignition Temperature	: No information available.
Decomposition Temperature	: No information available.
Water/Oil Dist. Coefficient	: No information available.
Elemental Phosphorus	: 0.0
Pour Pt	: -12 °C

SECTION 10: Stability and reactivity

10.1 Reactivity	: Stable under normal conditions of storage and uses.
10.2 Chemical stability	: Product is stable in sealed containers for five years.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Ignition sources, incompatible materials.
10.5 Incompatible materials	: Strong acids, bases, oxidative agents, and quaternary disinfectants can degrade/inactivate product. Test compatibility of product with rubber, plastic, or metal compounds and acids before full scale use.
10.6 Hazardous decomposition products	: Carbon monoxide and sulfur oxides may be released at thermal decomposition.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

	Effect dose / -concentration	Value	Species	Method	Symptoms / delayed effects
Proprietary blend of surfactants					
Acute oral toxicity	LD50	2000 mg/kg	Rat	ATE _{mix} (oral)	N/A
Acute dermal toxicity	LD50	>5000 mg/kg	Rabbit	ATE _{mix} (dermal)	N/A
Acute inhalation toxicity (gas)	LC50	N/A	Rat	N/A	N/A
Acute inhalation toxicity (gas/vapour)	LC50	N/A	Rat	N/A	N/A
Acute inhalation toxicity (dust/mist)	LC50	N/A	Rat	N/A	N/A
Benzyl Alcohol					

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Acute oral toxicity	LD50	1620 mg/kg	Rat	Given	N/A
Acute dermal toxicity	LD50	N/A	Rabbit	N/A	N/A
Acute inhalation toxicity (gas)	LC50	N/A	Rat	N/A	N/A
Acute inhalation toxicity (gas/vapour)	LC50	>4.178 ppm	Rat	Given	N/A
Acute inhalation toxicity (dust/mist)	LC50	N/A	Rat	N/A	N/A

Route of entry	: Skin contact. Eye contact. Ingestion. Inhalation.
Other information	: No information available.
Skin corrosion/irritation	: Causes skin irritation.
Eye damage/irritation	: Causes serious eye damage.
Respiratory/skin sensitization	: No information available.
Carcinogenicity	: No information available.
Mutagenicity	: No information available.
Reproductive Toxicity	: No information available.
Effects on or via lactation	: No information available.
Target organ systemic toxicity following single exposure	: No information available.
Target organ systemic toxicity following repeat exposure	: No information available.
Aspiration hazard	: No information available.

SECTION 12: Ecological information

12.1 Toxicity	
Aquatic toxicity	: Acute LC50/EC50: > 15 mg/L.
12.2 Persistence and degradability	: Expected to be readily biodegradable.
12.3 Bioaccumulative potential	: Not expected to bioaccumulate.
12.4 Mobility in soil	: Not available.
12.5 Results of PBT and vPvB assessment	: Not available.
12.6 Other adverse effects	: None known.

Additional ecological information

Use with good industrial practice, avoiding product dispersion into the environment.

*: If no test data exists, the criteria for mixture classification has to be used (calculation method).

SECTION 13: Disposal considerations

13.1 Waste treatment methods	: Dispose of contents/container in accordance with local, regional, national, and international regulations. Avoid release to the environment.
13.2 Special precautions	: Avoid spilled material and dispersal into soil and drains.

SECTION 14: Transport information

14.1 UN number	: None.
14.2 UN proper shipping name	: None.
14.3 Transport hazard class(es)	: None.
Land Transport (ADR/RID)	: None.
Inland waterway transport (ADN)	: None.
Sea transport (IMDG)	: None.
Air transport (ICAO-TI/IATA-DGR)	: None.
14.4 Packing Group	: None.
14.5 Environmental hazards	: None.
14.6 Special precautions for user	: No known precautions for transport.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	

SECTION 15: Regulatory information

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

EU regulation (EC) No. 453/2010 (REACH)

International Convention for the Prevention of Pollution from Ships, MARPOL 73 in its amended form.

International Maritime Dangerous Goods (Code IMDG) according to chapter VII of the International Convention for the Safety of Life at Sea, 1974.

Authorizations and/or restrictions on use : Not applicable.

Other EU regulations : All components are listed or exempt.

National regulations : Not determined.

15.2 Chemical Safety Assessment

: This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other Information

16.1 Abbreviations and acronyms

: ACGIH = American Conference of Government Industrial Hygienists
ADN = European Agreement concerning the International Carriage of Goods by Inland Waterways
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australia Inventory of Chemical Substances
ATE = Acute Toxicity Estimate
CAS# = Chemical Abstracts Service number
CLP = Classification, labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
DLS = Canadian Domestic Substances List
EC = European Community
EC-No. = EINECS and ELINCS Number (see EINECS and ELINCS)
EEC = European Economic Community
EHS = Environmental Health and Safety
EINECS = European Inventory of Existing Commercial Substances
ELINCS = European List of Notified Chemical Substances
ENCS = Existing and New Chemical Substances. Japan.
EU = European Union
GHS = Globally Harmonized System
IATA = International Air Transportation Association
ICAO-TI = Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG = International Maritime Dangerous Goods
IECSC = Inventory of Existing Chemical Substances in China
ISHL = Japan. Inventory of Chemical Substances
KECI = Korean Existing Chemicals Inventory
LC50 = Lethal Concentration to 50% of a test population
LD50 = Lethal Dose to 50% of a test population (Median Lethal Dose)
N/A = Not available
N.O.S. = Not Otherwise Specified
NDSL = Canada. Non-Domestic Substances List
NZIoC = New Zealand Inventory of Chemical Substances
OECD = Organization for Economic Co-operation and Development
PEL = Permissible Exposure Limit
PICCS = Philippines Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration(s)
REACH = Registration, Evaluation, Authorization, and Restriction of Chemicals Regulation (EC) No. 453/2010

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RID = Regulations concerning the International Carriage of Dangerous Goods by Rail

SARA = Superfund Amendments and Reauthorization Act

SDS = Safety Data Sheet

SOCMI = Synthetic Organic Chemical Manufacturing Industry

STEL = Short Term Exposure Limit

TCSI = Taiwan Chemic Substance Inventory

TPQ = Threshold Planning Quantities

TSCA = Toxic Substances Control Act

TWA = Time Weighted Average

UN = United Nations

vPvB = Very Persistent and Very Bioaccumulative

16.2 Key literature references and sources

: European Chemicals Agency, Classification Legislation, 2015
OSHA Hazard Communication– Occupational Safety and Health Administration, Hazard Communication: Hazard Classification Guidance for Manufacturers, Importers, and Employers, 2016

16.3 Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]

Classification	Justification
Acute Oral Tox. 5, H303	Calculation method
Acute Derm. Tox. 5, H313	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Acute Aquatic Tox. 2, H401	Calculation method

16.4 Relevant H-, R- phrases (number and full text)

Full text of abbreviated : H303 May be harmful if swallowed

H statements H313 May be harmful in contact with skin

H315 Causes skin irritation

H318 Causes serious eye damage

H401 Harmful to aquatic life

Full text of classifications [CLP/GHS] : Acute Oral Tox. 5, H303 Acute Oral Toxicity – Category 5
Acute Derm. Tox. 5, H313 Acute Dermal Toxicity – Category 5
Skin Irrit. 2, H315 Skin Corrosion/Irritation – Category 2
Eye Dam. 1, H318 Eye Damage/Irritation – Category 1
Acute Aquatic Tox. 2, H401 Acute Aquatic Toxicity – Category 2

Training advice : Wear protective gloves and eye/face protection. Avoid release to the environment.

16.5 Indication of changes

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