NGO comments on Final Screening Assessment & Proposed Risk Management Approach Documents for Selected Batch 9 Chemicals: A Response to *Canada Gazette Part I, Vol. 144, No. 38* — September 18, 2010 on Industry Challenge Chemicals of the Chemicals Management Plan

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Introduction

The Canadian Environmental Law Association (CELA) and Chemical Sensitivities Manitoba (CSM) are submitting the following comments in response to the *Canada Gazette,* Part I, Vol. 144, No. 38 – September 18, 2010 release of the final screening assessment and proposed risk management approach documents on vanadium pentoxide (CAS RN: 1314-62-1) identified under the Chemicals Management Plan (CMP), Batch 9 of the Industry Challenge.

CELA (www.cela.ca) is a non-profit, public interest organization established in 1970 to use existing laws to protect the environment and to advocate for environmental law reform. It is also a legal aid clinic that provides legal services to citizens or citizens' groups who are otherwise unable to afford legal assistance. In addition, CELA also undertakes substantive environmental policy and legislation reform activities in the areas of access to justice, pollution and health, water sustainability and land use issues since its inception. Under its pollution and health program, CELA has been actively involved in matters that promote the prevention and elimination of toxic chemicals addressed in the *Canadian Environmental Protection Act*, including the categorization process and implementation of the CMP.

Chemical Sensitivities Manitoba (CSM), a volunteer organization, was founded in 1997 by four individuals who saw the need to address the affects of toxic chemicals on human health and the possible link between the onset of chemical sensitivities and chemical exposure and, in particular, chronic low-level exposure. CSM raises awareness of the presence of toxic chemicals in the home and the environment and strongly advocates for the safe substitution of these toxins.

Our respective organizations along with other Canadian environmental and health non-governmental organizations (NGOs) have submitted substantial comments on assessment results and proposed management options for substances in Batches 1 through 10 of the Industry Challenge, including the final assessments and draft risk management options for selected chemicals in Batch 1 to 8.

Our organizations have used the public comment periods as opportunities to highlight the gaps and limitations as identified in the risk based assessments and the proposed management instruments for specific chemicals. Consequently, we have developed substantial recommendations to address the gaps and limitations that decision-makers should consider carefully for improving the current approach to the Chemicals Management Plan in Canada. These recommendations are intended to further strengthen and entrench the precautionary principle in the decision-making process and promote a high level of accountability to all users, manufacturers, importers and sellers of chemicals in Canada. Furthermore, these recommendations are designed to ensure the protection of human health and environment from toxic chemicals throughout their life cycle.

Background

In this submission, we provide commentary to the final screening assessment report (SAR) and the proposed risk management scope document for one substance - vanadium pentoxide – CAS RN: 1314-62-1, a substance in Batch 9 of the Industry Challenge, Chemicals Management Plan.

The final screening assessment report concluded that vanadium pentoxide, based on its carcinogenicity, can be potentially harmful at any level of exposure and is considered to be a substance that may be entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health. The report also concluded that vanadium pentoxide meets the criteria for persistence but does not meet the criteria for bioaccumulation, as defined in the *Persistence and Bioaccumulation Regulations*, CEPA 1999. The presence of vanadium pentoxide in the environment results primarily from human activity. Therefore, vanadium pentoxide meets one or more criteria under section 64 of CEPA 1999 making it CEPA toxic.[1]

We want to note at this time, that the absence of specific commentary on each substance in Batch 9 should not be taken to mean that our organizations do not have questions or concerns regarding the final assessment results and the proposed risk management approach for other substances. The comments we have provided on the assessments and risk management proposals for the previous batches released under the CMP contain commentaries that are also relevant for many of the chemicals listed in Batch 9. These comments are intended to provide your departments with a broad understanding of the public interest expectations of the government to protect Canadians and their environment from toxic chemicals. It is our view that the issues and gaps on which we continue to elaborate in these submissions have not been substantially addressed through the current government approach.

The lack of response to improve the scope of the assessment approach has resulted in very few regulatory actions aimed to eliminate CEPA-toxic chemicals. In this regard, our underlying concern is the potential impact to human health and environment that will continue to exist as a result of permitting the on-going use, release, sale, import, disposal or export of these toxic chemicals, even with the application of control measures rather than measures for phase out. Through these submissions, our organizations want to ensure that the government utilizes the full extent of its authority under *CEPA 1999* to promote and implement the elimination or phase out of the most toxic substances found in the Canadian market.

The commentary below identifies areas in the final screening and the risk management scope documents where the government should strengthen its conclusion of toxicity under CEPA as well as its proposals for risk management measures for vanadium

[1] Environment Canada and Health Canada. Final Screening Assessment for the Challenge Vanadium oxide Chemical Abstracts Service Registry Number 1314-62-1 (Ottawa, Canada, September 2010). See http://www.ec.gc.ca/ese-ees/62A2DBA9-0636-4217-8D9B-36AFEB878179/batch9_1314-62-1_en.pdf

pentoxide. The comments and recommendations presented in this document focus on the impact of anthropogenic sources of this substance as they represent the most significant sources for concern.

Comments & Recommendations – Vanadium pentoxide (CAS RN: 1314-62-1)

Table 1: Final results of Categorization, Final Screening Assessment & Proposed Risk Management Approach for Vanadium Oxide - Batch 9 substance of the Chemicals Management Plan (CMP), Challenge Program[2, 3]

Substance name (CAS RN)	Categorization (S. 73)	Final screening assessment	Key human health concerns	Proposed Risk Management Approach/ Proposed measures	Uses/sources & volume (kg)
Vanadium pentoxide (1314-62-1)	Carcinogenicity P(air, water, soil, sediment)	CEPA toxic P(air, water, soil, sediment)	IARC Group 2B carcinogen EC Category 3 mutagen EC Category 3 developmental toxin Proposed EC Category 2 carcinogen Proposed EC Category 2 mutagen	Reductions of vanadium pentoxide as a result of co-benefits of existing and proposed programs to reduce particulate emissions from combustion of certain fossil fuels. Implementation of a Significant New Activity (SNAc) provision under CEPA 1999. Addition of vanadium pentoxide to the Environmental Emergency Regulations.	Manufacture of ferrovanadium alloys (major use), sulphuric acid, catalytic reduction of nitrogen oxide and sulphur emissions from power plants, burning of certain fossil fuels and emissions from oil refineries. Other minor uses identified. No consumer usage identified. Incidental production 2006: between 1,000,000 – 10, 000, 000. Importation for 2006: 100, 000 – 1,000,000 Usage in Canada for 2006: 1,000,000 – 10,000,000.

[2]Ibid.

[3] Environment Canada and Health Canada. Proposed Risk Management Scope for the Challenge Vanadium oxide Chemical Abstracts Service Registry Number 1314-62-1 (Ottawa, Canada, September 2010).

Note: P-persistence; B-bioaccumulation (Bioaccumulation Concentration or Bioaccumulation Factor); iT-Inherent toxicity); IARC – International Agency for Research on Cancer; EC – European Commission

Table 2: Proposed risk management measure – comments & recommendations for vanadium pentoxide

Specific sections of risk management scope for vanadium pentoxide[4] **(CAS RN: 1314-62-1)**	**Summary of proposed government measures** [5]	**CELA & CSM - comments**	**Recommendations**
Section 1.3 proposed measure	• Ministers will develop a regulation or instrument respecting preventive or control actions to protect the health of Canadians and the environment from the potential effects of exposure to this substance. • Vanadium pentoxide is not subject to the virtual elimination provisions under CEPA 1999 and will be managed using a lifecycle approach, to prevent or minimize its release into the environment	• We are in agreement that vanadium pentoxide is CEPA toxic. • We have concerns that the proposed approach to manage vanadium pentoxide using a lifecycle approach to prevent or minimize releases to the environment for all applications is not sufficient to protect human health or the environment. • The incidental production and the volume usage of vanadium pentoxide in Canada are both high as a result of industrial processes. From information presented in the SAR, its release patterns appear to be quite diverse. With these data and the inherent human health implications – it is a human carcinogen – control measures for the anthropogenic use and release of this substance should be a move towards the phase out of releases of this substance followed by virtual elimination.	Rec.: We support the government's decision on CEPA toxicity for vanadium pentoxide. Rec.: We urge the government to consider more stringent measures for the management of vanadium pentoxide – that is, the phase out of the anthropogenic sources of this substance with a goal of eventual elimination.

[4] Ibid.
[5] Ibid.

Specific sections of risk management scope for vanadium pentoxide[4] **(CAS RN: 1314-62-1)**	**Summary of proposed government measures [5]**	**CELA & CSM - comments**	**Recommendations**
6.1 Existing Canadian risk management	• Nova Scotia, Ontario and Alberta all have provincial requirements for emissions from the electricity sector for nitrogen oxides, sulfur dioxide and mercury (NS and AB only) (CCME 2006b). Co-benefits – reduction of emissions of substances such as other metals (including vanadium pentoxide) and particulate matter. • Ontario's phase out of inefficient coal-fired electric power generation plants by the end of 2014 - air quality benefits including: reduced emissions of metals and particulate matter (Ontario 2009). • The Government of Canada is taking action to reduce greenhouse gas emissions in the electricity sector by moving forward with regulations on coal-fired electricity generation (Canada 2010). • Air-borne vanadium pentoxide	• While the provinces of NS, ON and AB all have provincial regulations for emissions from the electricity sector for nitrogen oxides, sulphur oxide and mercury (AB and NS only for the latter), it is uncertain why the other provinces and territories do not have similar regulations. However, it is understood that not all provinces and territories have the same sources for electricity. For the overall reduction of pollutants from this sector and for the protection of human health and the environment, provinces and territories should be obligated to reduce these emissions not only through provincial regulations but through more stringent federal government industrial air emissions regulations. • There should be an explicit requirement to target vanadium pentoxide emissions in provincial regulations. • We have on-going concerns about the reliance of CWS established through the Canadian Council of Ministers for the Environment (CCME) to address specific industrial emissions of chemicals because of their lack of enforceable standards. In particular, there is great dependence on the CWS (2010) for PM, ozone and mercury to impact on reducing the air- borne	Rec.: While some provinces have regulations that would reduce emissions from the electricity sector for nitrogen oxides, sulfur dioxide and mercury (NS and AB only for the latter), federal regulations to reduce and even eliminate these emissions would be more appropriate and effective for addressing releases of vanadium pentoxide. Rec.: The federal government, in conjunction with the provincial governments, should initiate a phase out of coal-fired electric power generating plants for reasons already cited. Resources and investments should be directed to non toxic alternatives for energy production. Rec.: A review and evaluation of the effectiveness of the CWS for ozone, particulate matter and other pollutants should be undertaken by the federal government, provinces and territories. Rec.: The government's monitoring program should be expanded to include all substances covered under the CWS, particularly PM, mercury and ozone.

Specific sections of risk management scope for vanadium pentoxide[4] **(CAS RN: 1314-62-1)**	**Summary of proposed government measures** [5]	**CELA & CSM - comments**	**Recommendations**
	concentrations may be reduced by the Canada-Wide Standards (CWS) for particulate matter (PM) and Ozone measured in ambient air. The CWS for $PM_{2.5}$ is 30 $\mu g/m^3$ (24 hour average) is to be achieved by year 2010 (CCME 2006a). CWS for Mercury Emissions from Coal-fired Electric Power Generation Plants are expected to reduce emissions of particulate matter and other metals from these sources (CCME 2006b). • The Government of Canada will no longer authorize the use of vanadium pentoxide for either medicinal or non-medicinal purposes in natural health products. • Vanadium pentoxide is listed as a pollutant in Schedule 1 of the *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals* (Canada 2007). • Vanadium pentoxide is listed in	concentrations of vanadium pentoxide. Stakeholders including NGOs have expressed skepticism, asking whether the CSW will be as effective as predicated by CCME. In the case of addressing vanadium pentoxide, there is a need to have more stringent enforceable standards in order to see meaningful reductions of this pollutant and other air-borne pollutants. • The federal government would be more effective in reducing green house gas emissions, mercury and other pollutants, with the phase out of coal-fired electric plants. Current regulations still result in emissions of these pollutants, including vanadium pentoxide. The pollution data from the National Pollutant Release Inventory provide substantial evidence that coal- fired plants contribute significant levels of pollutants (e.g., mercury, cadmium, criteria air contaminants) to the atmosphere. • The province of Ontario made a commitment that by 2014, the coal-fired plants would be closed. This could substantially improve the protection of the environment and human health from impacts from these toxic chemicals. However, the current delays in efforts to close down these plants have resulted in on-going releases of toxic	

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	the Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (Canada 2005) in the non-fused form. • Vanadium and its compounds, except when in an alloy, are listed on the National Pollutant Release Inventory (NPRI).	chemicals, including vanadium pentoxide. • We are in agreement that the federal government should no longer permit the use of vanadium pentoxide in natural health products. • It is difficult to determine if vanadium pentoxide is covered under the NPRI because its CAS RN differs from the CAS RN listed under NPRI.	
7.1 Chemical alternatives or substitutes	• Vanadium is typically found in heavy fuel oils. Most oil-fired power plants used to burn heavy oil in their furnaces but over the last two decades, these power plants have gradually started to use lighter fuels such as natural gas in order to reduce air pollution (Statistics Canada 2007). These substitutes may not have undergone an assessment to determine whether they meet the criteria under section 64 of CEPA 1999.	• While it is a move in the right direction for power plants to gradually shift towards the use of lighter fuels in order to reduce air pollution, it should be recognized that vanadium pentoxide release reduction was not specifically targeted. By using lighter fuels in the oil-fired power plants, the government is obligated to assess substitute fuels for their safety. Since this shift has been over the past two decades, one would expect that some of the lighter fuels may have been already assessed. However, this was not obviously evident from the survey data gathered for this substance. • With no evidence to indicate that the substituted fuels are indeed safer than the original blends used, this requires	Rec.: The preparation of a list of possible substitutes for vanadium pentoxide for all of its applications should be a mandatory exercise in the development of its risk management strategy. Rec.: There should be an obligation on the government's part, to assess all identified substitutes under CEPA 1999 prior to their usage. This assessment process should be more rigorous than the current approach taken for the substances that require substitution. Such an assessment process should be transparent and should involve a multi-stakeholder taskforce – one that would review and conclude on the safety of these substitutes.

Specific sections of risk management scope for vanadium pentoxide[4] (CAS RN: 1314-62-1)	Summary of proposed government measures [5]	CELA & CSM - comments	Recommendations
		investigation and subsequent assessment by the government to determine if these substitutes are CEPA-toxic. • It has been noted that there was no other evidence for substitutes for vanadium pentoxide considering its diverse use pattern.	
7.2 Alternative technologies and/or techniques	• No alternative technology or techniques have been identified.	• Apart from possibly changing sources of fuel, changes in technology should be feasible for reducing incidental releases of vanadium pentoxide and other pollutants. • Because of the diversity in release and use of vanadium pentoxide, alternative technologies or techniques for reducing the release of this substance may be quite different across the various manufacturing sectors. Again, there was a lack of information in this area.	Rec.: As with safe substitutes, alternative technologies or techniques require further investigation by the government. A lack of information through the surveys should not indicate that there has been no progress made in this area.
7.4 Children's exposure	• Based on the information received during the survey, the government has proposed that no risk management actions to specifically protect children are required for this substance at this time.	• In our view, the assessment lacked sufficient evidence to conclude that no risk management actions are required to protect children from exposure to vanadium pentoxide. • Children who reside in the vicinity or down wind of power plants and other industrial processes that release vanadium pentoxide, would be at greater risk from emissions released from these plants. The assessment	Rec.: The government should use the full scope of its authority under CEPA 1999, to collect data on the impacts to children's health from exposure to vanadium pentoxide. Specifically, utilize CEPA Section 71(1)(c), to seek mandatory toxicological data from industry focused on children's exposure. Rec.: Similarly, management proposals should be expanded to protect other vulnerable sub-

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		has failed to identify and address these scenarios. • The current approach by government to collect exposure information on children through a voluntary questionnaire is very ineffective and does not address the full scope of issues required to consider impacts to children. The emphasis of the voluntary question was on intended use by children. Requiring an investigation of the impacts to children through the releases from industrial processes was not included in the survey. The government should use its full authority under Section 71, in particular Section 71 (1) (c), to require industry to provide toxicological and other test data that will address this information gap. This would better inform the assessment report and result in more substantial risk management strategies. These questions should focus explicitly on filling in these data gaps. • Also, other vulnerable sub-populations have not been considered in the assessment for human health effects. These include pregnant women, aboriginal communities, remote northern communities, low income individuals, workers and those who are	populations of society such as pregnant women; people of low income; workers; people with chemical sensitivities; aboriginal and remote northern communities; as well as individuals living in close proximity or downwind from industries that release vanadium pentoxide.

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		chemically sensitive.	
8.1 Human health effects	• The proposed human health objective for vanadium pentoxide is to minimize human exposure to the greatest extent practicable.	• While it is understandable that the intent is to minimize human exposure to the greatest extent practicable, this cannot be achieved to the extent that it sufficiently protects human health because of the approach taken by government that does not lead to a phase out of anthropogenic releases of this substance. • As a result, risk management has to be more stringent in order to minimize human exposure and as indicated in the comments for children's exposure, there are data gaps that require filling so that their exposure to this substance can be minimized.	Rec.: For human exposure to be minimized to greatest extent practicable, the government has to take an approach that will lead to the phase out of this substance followed by eventual elimination, when anthropogenic emissions are considered.
8.2 Risk management objective	• The risk management objective is to prevent increases in exposure and reduce industrial emissions associated with particulate matter which may contain vanadium pentoxide.	• The risk management objective should aim to decrease and eliminate human exposure to anthropogenic sources of vanadium pentoxide – via industrial emissions. • The federal government expects that its actions and those of the provinces in their work to meet the CCME - CWS for PM will result in the necessary reduction of metal emissions, including vanadium pentoxide by 2010. It is our view, that this approach will not sufficiently address the concerns associated with the use and release of	Rec.: We do not fully support the proposed risk management objective for vanadium pentoxide as it does not fully protect human health from exposure. As a result, we propose that the proposed risk management objective should aim to eliminate vanadium pentoxide releases to the environment and not only minimize them. Rec.: The government should develop and implement regulatory actions on vanadium pentoxide that extend beyond the existing guidelines and standards such as those outlined

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		vanadium pentoxide. It is unclear as to the level of reduction of vanadium pentoxide required that will be effective in achieving the CWS for PM since other particulate matter emissions are also included. At present, not all provinces have stringent enough environmental regulations in place that aim at reducing particulate matter emissions - including emissions of heavy metals, that would achieve the guidelines as outlined under the CWS process. These regulations would not possibly achieve significant pollution prevention and source reduction. Therefore, it is our view that the 2010 guidelines for PM and ozone are inadequate. Hence, it is considered inappropriate to rely on such standards to address vanadium oxide release reduction.	under the CWS process. These CWS do not specifically aim for the prevention or elimination of vanadium oxide from anthropogenic sources.
9.2 Proposed risk management tool and regulation	The principal focus of risk management actions is to address the prioritized sources such as the combustion of fossil fuels including oil and coal through the following measures listed below:	We support the approach that priority focus should be directed to fossil fuels (oil and coal), However, the government should outline its intentions to address other anthropogenic sources of vanadium oxide and provide specified timeframes to address these sources.	
	• **Reductions of vanadium**	• Coal-fired power plants: This sector has been	Rec.: The government should take regulatory

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	pentoxide as a result of co-benefits of existing and proposed programs to reduce particulate emissions from combustion of certain fossil fuels - Work is underway to update the Government's knowledge of the health impacts of various industrial sectors including electricity generation (coal-fired power plants) and petroleum refining. The objective of this work is to inform federal and provincial decision-making on implementation of regulatory activities in the long-term.	identified as being responsible for a significant portion of mercury emissions despite the development of a CWS, as well as other metal emissions. In this regard, the CWS would be equally ineffective in addressing the emissions of vanadium pentoxide from these plants. The Canadian population continues to be exposed to on-going toxic emissions from these processes despite the potential presented by applying alternative energy sources. The identification of vanadium pentoxide from coal-fired plants provides additional evidence to support the need for eventual phase out of coal-fired electrical power generation plants with safer alternative forms of power generation. The use of alternative energy production would eliminate a significant emitter of mercury as well as eliminate the emissions of other metals, including vanadium pentoxide. • Petroleum refining: While there are regulations regarding the emissions from refinery operations, the toxic emissions from these facilities continue to be significant. They are not sufficiently stringent so as to reduce the pollutants that include air-borne contaminants such as vanadium pentoxide; carcinogens; developmental or reproductive toxicants; greenhouse gases; and smog	actions on vanadium pentoxide that extend beyond existing guidelines and standards such as those outlined under the CWS process. These CWS do not specifically aim for the prevention or elimination of vanadium pentoxide from anthropogenic sources. Rec.: The government should promote the phase out coal-fired power plants and increase its support for the development and use of alternative energy production (excluding nuclear power) in its risk management strategy to reduce the releases of vanadium pentoxide as well as other air contaminants. Rec.: Provincial and federal regulations that govern petroleum refineries and their operations, require immediate review with consideration being given to the phase-out and elimination of the releases of vanadium pentoxide. Also, this gives the opportunity to the provincial and federal governments to critically review standards for all other contaminants in this sector and actively pursue significant releases to air, water and soil in order to better protect the environment and human health.

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		forming substances. The acknowledgement of releases of vanadium pentoxide from petroleum refinery would suggest that the current standards are inadequate and should be strengthened to address new chemicals of concern. The federal government should support efforts that provide increase considerations towards the elimination of toxic chemicals, including vanadium pentoxide as part of its management strategy. • The actual scope of the work to inform the government of the health impacts of various industrial sectors is very vague. It is unclear if this data will be derived from monitoring programs and, if so, will this data be publicly available. Furthermore, there are concerns as to the scope of stakeholder engagement as the government determines the health impacts from various industrial sectors such as the oil refineries and the tar sands. As noted in our numerous submissions under the Challenge Program of the CMP, we have highlighted the need for full transparency and effective stakeholder engagement. Because of the level of details presented in the draft Risk Management Approach in this regard is unclear how the government will proceed in this area. It is critical to the process that the government includes consultation with all	Rec.: We urge the government to be explicit in regard to the actual scope of the work or information that would eventually inform them of the health impacts of the various industrial sectors that are of interest. Rec.: We also request that the government include stakeholder engagement in the process of determining health impacts and the resulting proposed risk management tools.

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		stakeholders including communities located in the close proximity, downwind or downstream from the industrial sectors that are under review. This would allow for additional opinions and perspectives on health impacts from these industrial sectors.	
	• **The Government of Canada plans to implement Significant New Activity provisions under CEPA 1999 to this substance -** This would require that any proposed new manufacture, import or use be subject to further assessment, and would determine if the new activity requires further risk management consideration.	We have seen an increase in reliance by the government on the proposal to apply SNAc provisions in cases where substances have been found to be CEPA toxic. This approach continues to concern our organizations as SNAc do not aim to stop the release of toxic chemicals but rather places these chemicals in a state of limbo. Our organizations have, in the past, submitted substantial recommendations regarding the SNAc provisions as used in the Challenge. We are concerned that this proposal lacks any opportunity for further meaningful public comments. For vanadium pentoxide, its releases and uses can be quite diverse and, as a result, it is essential for transparency if new activities are being identified.	Rec.: We recommend that the proposal to implement SNAc provisions for any new uses of vanadium pentoxide be replaced with an eventual phase out of releases of this toxic chemical.
	• **Addition of vanadium**	• Based on the human health and	Rec.: We support the addition of vanadium

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	pentoxide to the *Environmental Emergency Regulations* - This would require facilities at or above the associated quantities and concentrations to prepare environmental emergency plans that will prevent, prepare for, respond to and recover from an environmental emergency.	environmental impacts of vanadium oxide, we support the proposal to include this substance to the *Environmental Emergency Regulations* for all facilities. Several substances targeted for Environmental Emergency Plans have outlined a use threshold of over 4000 kg (e.g. benzyl chloride and butanone oxime).[6, 7] There should be no threshold value established. As a result, this would ensure all facilities prepare Environmental Emergency Plans. • The presence of a threshold value in relation to the preparation of environmental emergency plans will mean that some facilities will not require such plans. Indeed, all facilities should be required to develop such plans. There is concern that in the determination of this value, there may be no consideration for the health impacts of communities in close proximity to industrial facilities releasing this substance as well as	pentoxide to the Environmental Emergency Regulations for all facilities that release, use, dispose, sell or import this chemical. Rec. All facilities should be required to prepare Environmental Emergency plans regardless of volume use or release. Rec.: Careful consideration should be given to the persistence and carcinogenicity of vanadium pentoxide and in particular, exposure levels of communities in the close proximity or downwind from these facilities, when deciding upon the concentration or value at or above which a facility must prepare an environmental emergency plan.

[6] Environment Canada and Health Canada. Proposed Risk Management Approach for Benzene, (chloromethyl)- (Benzyl Chloride) Chemical Abstracts Service Registry Number (CAS RN): 100-44-7. November 2009. Accessed at http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=95B65701-1#9.

[7] Environment Canada and Health Canada. Proposed Risk Management Approach for2-Butanone, oxime (butanone oxime) Chemical Abstracts Service Registry Number (CAS RN): 96-29-7. March 2010. Accessed at http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=7D1F7A15-1.

Specific sections of risk management scope for vanadium pentoxide[4] (CAS RN: 1314-62-1)	Summary of proposed government measures [5]	CELA & CSM - comments	Recommendations
		remote northern communities for whom long range transport and subsequent deposition are concerns but still not adequately defined. • Proposals for these regulations should include response plans to all spills. There should be significant emphasis on how facilities would plan to promote greater accountability to protect occupational health and special consideration as to the impact on public health and the environment. • The presence of stockpiles of vanadium oxide at facility plants should provide additional justification for adding this substance to a list under the *Environmental Emergency Regulations*. The proposed Environmental Emergency Regulation should provide additional consideration and details on how the regulations address containment of waste and stockpiles of vanadium pentoxide.	

Other concerns

- **Usage of vanadium pentoxide**

The role of vanadium oxide in the manufacturing of pesticides has been inadequately dealt with in the final assessment. It is unknown if its role is as a catalyst or if the substance is present as a residue from the manufacturing process. The amount used by this industry is significant - 38,300 kg annually (2006 figures).[8] Because of the toxicity of vanadium pentoxide, it is essential for the government to clarify the role of this substance in pesticide manufacturing and therefore determine the need for safe substitution or the phase out of this substance in pesticide applications. The government's risk management proposal fails to indicate how the *Pesticides Control Products Act* (PCPC) will address the finding of toxicity for this chemical. The assessment also fails to indicate if vanadium pentoxide is present in final products and report any possible impacts on human health and the environment.

Recommendation: Is vanadium pentoxide registered as an active ingredient? If so, we should urge the government to de-register the substance based on the toxicity information gathered under the screening assessment. Alternatively, the recommendation would be for the immediate re-evaluation of vanadium pentoxide under PCPA.

Recommendation: We recommend additional measures be undertaken under the PCPA to prohibit the use of vanadium oxide as an active ingredient or as an inert ingredient in pesticide products.

- **Long-range transport**

In the public response section,[9] it was stated that long-range transport potential was not quantified in the draft SAR, as this source is not expected to contribute significantly to the Predicted Environmental Concentrations that were used to quantify exposure. It is not clearly understood why this is so. This is not clearly understood and should have been clearly defined in the final assessment for vanadium pentoxide.

Recommendation: The government should address the gap in the assessment report related to the discussion on long-range transport potential and determine the potential impacts on the northern communities and their ecosystems.

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[8] Ibid.

[9] Government of Canada. Chemicals Management Plan web site. Summary of Public Comments received on the Challenge substance Vanadium pentoxide (CAS 1314-62-1) Draft Screening Assessment Report for Batch 9. Accessed at http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=9DB8B088-1

- **Data gap - toxicity**

As with many of the chemicals addressed in the Challenge Program, toxicity information has focused on three main endpoints - carcinogencity; reproductive and developmental toxicity; and mutagenicity. There are other health endpoints that have not been a focus for the Challenge and arguments to include the consideration of these endpoints have focused on the lack of toxicity data as well as the lack of acceptable testing protocols to guide the determination of end-points such as endocrine disruption and neurotoxicity. Also, there have been arguments as to the financial costs associated in determining these health endpoints.

The range of toxicity data for all chemicals should include the submission of endocrine disruption potential and neurodevelopmental toxicity data. Such data are not explicitly requested for in the scope of the surveys conducted under section 71 for chemicals targeted under the Industry Challenge nor is it required under the voluntary questionnaire. Therefore, enhanced efforts should be made by the government during the screening assessment process that would include such data for making a determination of toxicity on these substances.

Recommendation: We urge the government to address the significant data gaps that exist in the assessment of vanadium pentoxide as it pertains to the toxicity endpoints (e.g. endocrine disruption potential, neurotoxicity, sensitizer). The consideration of these endpoints is not only significant for this substance but is important for all substances that are being assessed under the CMP. However, it is important that the data requested in the section 71 survey under CEPA 1999, explicitly require information on the potential of the substance to be an endocrine disruptor, neurodevelopmental toxicant or a sensitizer.

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